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WING LOADS AND LOAD DISTRIBUTIONS THROUGHOUT THE LIFT

RANGE OF THE DOUGLAS X-3 RESEARCH AIRPLANE

AT TRANSONIC SPEEDS

By Earl R. Keener and Gareth H. Jordan

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**NATIONAL ADVISORY COMMITTEE
FOR AERONAUTICS**

WASHINGTON

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RESEARCH MEMORANDUM

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RANGE OF THE DOUGLAS X-3 RESEARCH AIRPLANE
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SUMMARY

Wing loads and load distributions were obtained by differential-pressure measurements between the upper and lower surfaces of the left wing of the Douglas X-3 research airplane to determine the effects of angle of attack and Mach number on the wing characteristics at transonic Mach numbers. The wing has an aspect ratio of 3.09 and a modified 4.5-percent-thick hexagonal section. Data cover the range from near-zero lift to maximum lift and from a Mach number of 0.71 to a Mach number of 1.15.

The chordwise load distributions and the wing-section aerodynamic characteristics were similar at each wing station. A large load developed at the leading edge resulting from the relatively sharp leading edge. At Mach numbers below 0.9 separation of the flow from the leading edge resulted in a loss in leading-edge load and a low maximum lift. The maximum normal-force coefficient of the wing panel was 0.66 at a Mach number of 0.71 compared to 1.2 at supersonic Mach numbers. Spanwise load distributions were essentially elliptical throughout the lift and Mach number range tested. Values of normal-force-curve slope ranged from 0.076 per degree at a Mach number of 0.71 to 0.116 per degree at a Mach number of 1.0. Variation of pitching moment with lift was unstable at the lower Mach numbers, becoming increasingly stable above a Mach number of about 0.9. The chordwise location of the center of pressure varied with angle of attack between 15- and 30-percent chord at subsonic Mach numbers and between 31- and 37-percent chord at supersonic Mach numbers. The spanwise location of the center of pressure was relatively constant with lift and Mach number at about 42 percent of the panel span. The flight results are in good agreement with wind-tunnel results at Mach numbers below 0.90 and in fair agreement at Mach numbers of 0.90 and 0.92.

Deflecting the leading-edge flap about 7° over a Mach number range of 0.71 to 0.80 increased the maximum normal-force coefficient about 0.06 and moved the center of pressure rearward at the lower angles of attack and slightly forward at the higher angles of attack. No change occurred in the spanwise location of the center of pressure.

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INTRODUCTION

Flight tests of the Douglas X-3 research airplane have been conducted at the NACA High-Speed Flight Station at Edwards, Calif., to explore the subsonic and low supersonic Mach number range with a thin-winged airplane designed for supersonic speeds. As a part of the flight test program wing loads and load distributions were obtained to contribute some general aerodynamic data on this supersonic design. The data were obtained by differential-pressure measurements between the upper and lower surfaces of the left wing.

This paper presents an analysis of the effects of angle of attack and Mach number on the wing loads and the chordwise and spanwise load distributions over a Mach number range of 0.71 to 1.15. The data cover the normal range of angle of attack and Mach number of the airplane. Also included are the preliminary results of the effect of deflecting the leading-edge flap about 7° at $M \approx 0.71, 0.76$, and 0.80 throughout the lift range.

Reference 1 presents some preliminary pressure distributions over the upper and lower surfaces at a midsemispan station of the wing through an angle-of-attack range at Mach numbers of about 0.61, 0.78, 0.94, and 1.10.

SYMBOLS

A	aspect ratio, b^2/S
$b/2$	wing semispan
$b'/2$	wing-panel span, spanwise distance from first row of orifices ($0.301b/2$) to wing tip, ft
C_N'	wing-panel normal-force coefficient, $\int_0^{l'} c_n \frac{c}{c_{av}} d \frac{2y'}{b'}$
C_{NA}	airplane normal-force coefficient, Wn/qS
$\frac{C_N'(S'/S)}{C_{NA}}$	ratio of normal force of wing to total airplane normal force

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c_b' wing-panel bending-moment coefficient about $0 \frac{b'}{2}$,

$$\int_0^1 c_n \frac{c}{c'_{av}} \frac{2y'}{b'} d \frac{2y'}{b'}$$

c_m' wing-panel pitching-moment coefficient about $0.25\bar{c}$,

$$\frac{c'_{av}}{\bar{c}'} \int_0^{b'/2} c_m' \left(\frac{c}{c'_{av}} \right)^2 d \frac{2y'}{b'}$$

c_p differential pressure coefficient, $\frac{p_l - p_u}{q}$

c local wing chord parallel to plane of symmetry, ft

\bar{c}' mean aerodynamic chord of wing panel,

$$\frac{2/S'}{b'/2} \int_0^{b'/2} c^2 dy', \text{ ft}$$

c'_{av} average chord of wing panel, ft

c_m section pitching-moment coefficient about $0.25c$,

$$\int_0^1 c_p \left(0.25 - \frac{x}{c} \right) d \frac{x}{c}$$

c_m' section pitching-moment coefficient about line perpendicular
to longitudinal axis of airplane, passing through $0.25\bar{c}'$,
 $c_m + 0.50(1 - \bar{c}'/c)c_n$

$c_m' \left(\frac{c}{c'_{av}} \right)^2$ section pitching-moment parameter

c_n section normal-force coefficient, $\int_0^1 c_p d \frac{x}{c}$

$c_n \left(\frac{c}{c'_{av}} \right)$ section normal-load parameter

g acceleration due to gravity, ft/sec^2

k ratio of experimental lift-curve slope to theoretical value
of $2\pi/\beta$, both taken at the same Mach number

M	free-stream Mach number
n	normal-load factor, g units
p_l	local static pressure on lower wing surface, lb/sq ft
p_u	local static pressure on upper wing surface, lb/sq ft
q	free-stream dynamic pressure, lb/sq ft
S	total wing area, including area projected through fuselage, sq ft
$S'/2$	area of wing panel (outboard of $0 b'/2$), sq ft
W	airplane weight, lb
x	chordwise distance rearward of leading edge of local chord, ft
x_{cp}	chordwise location of center of pressure of wing section, $(0.25 - c_m/c_n)100$, percent c
x'_{cp}	chordwise location of center of pressure of wing panel from leading edge of \bar{c}' , $(0.25 - C_m'/C_N')100$, percent \bar{c}'
y'	spanwise distance outboard of $Ob'/2$, ft
y'_{cp}	spanwise location of center of pressure of wing panel, $(C_b'/C_N')100$, percent $b'/2$
α	measured airplane angle of attack, deg
β	compressibility parameter, $\sqrt{1 - M^2}$
δ_{aL}	left aileron position, deg
δ_f	leading-edge flap position, deg

DESCRIPTION OF AIRPLANE AND WING PANEL

Photographs of the airplane are shown in figure 1, and a three-view drawing presenting the overall dimensions is shown in figure 2. The physical characteristics of the airplane and wing panel are given in table I.

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The wing has an aspect ratio of 3.09, a taper ratio of 0.39, and zero incidence, dihedral, and twist. A line through 75-percent local chords is perpendicular to the plane of symmetry. The wing section is a 4.5-percent-thick modified hexagonal airfoil with vertices at 30- and 70-percent chord. Modifications to the airfoil consisted of a 188-inch radius at 30- and 70-percent chord and a small radius at the leading and trailing edges as shown in table II.

A drawing of the wing is shown in figure 3. The wing panel consists of the portion of the left wing outboard of the first streamwise row of orifices (0.30lb/2). All the wing-panel coefficients are based on the geometric properties of the wing panel included in table I. The leading-edge flap has a constant streamwise chord of 12.5 inches and extends from the wing root to the wing tip. Geometric properties of the leading-edge flap are also included in table I. Two control-actuator fairings are located on the bottom surface of each wing as shown in figures 2 and 3.

INSTRUMENTATION AND ACCURACY

Standard NACA film-recording instruments were used to record the wing differential pressures, indicated free-stream static and dynamic pressures, normal acceleration, angle of attack, angle of sideslip, aileron position, leading-edge flap position, and rolling and pitching angular velocities and accelerations. All instruments were correlated by a common timer.

A pitot-static tube with an NACA type A-6 total-pressure head (ref. 2) was mounted on a nose boom and the static-pressure error was determined in flight. The total estimated error in Mach number is within ± 0.01 . Angle of attack and angle of sideslip were measured by vanes mounted on the nose boom. The angle of attack indicated by the recorder is presented in this paper and was measured with respect to the fuselage reference plane.

Flush-type static-pressure orifices installed in the left wing were arranged in five streamwise rows. The ordinates of the airfoil section at each row of orifices are given in table II. The chordwise locations of the orifices are given in table III. Figure 3 shows the spanwise locations of the five rows of orifices.

The orifices were connected by tubing through the wing to the manometers in the instrument compartment. Lag in the pressure-recording system was determined by the method for photographic instruments presented in reference 3 and was checked in flight by comparing abrupt and gradual maneuvers. The lag was found to be negligible for the data presented in this paper; therefore, no lag corrections were applied to the data.

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Accuracies of other pertinent recorded quantities are:

Differential-pressure measurements, $p_l - p_u$, lb/sq ft	± 7
Normal load factor	± 0.05
δ_{a_L} , deg	± 0.2

These accuracies resulted in the following estimated probable accuracy in some of the coefficients for the Mach number range of 0.70 to 1.15:

C_p	± 0.02
c_n	± 0.03
c_m	± 0.01
C_{NA}	± 0.02
C_N'	± 0.04
C_m'	± 0.02

TESTS

The data presented were obtained from pull-ups and wind-up turns at Mach numbers from 0.71 to 1.15 at an altitude of about 30,000 feet. Reynolds number based on the mean aerodynamic chord of the wing varied between 16×10^6 and 26×10^6 .

DATA REDUCTION AND PRESENTATION

Automatic data reduction equipment, utilizing a card punch and a card program calculator, was used to obtain pressure coefficients from the data recorded on film. The calculator also performed the chordwise and spanwise integrations to obtain the normal-force and pitching-moment coefficients. The numerical integration was accomplished by means of parabolic arc approximations to the pressure functions. Comparison of numerical integrations with mechanical integrations of hand-faired pressure distributions gave excellent agreement.

The pressure coefficients and aerodynamic characteristics obtained from the wing differential pressure measurements are presented in tables IV to XIV for the approximate Mach numbers of 0.71, 0.77, 0.83, 0.88, 0.90, 0.92, 0.96, 0.99, 1.01, 1.10, and 1.15. The maneuvers at Mach numbers of 1.10 and 1.15 experienced a decrease in Mach number of about 0.06 from the given Mach number as the angle of attack increased. The data for the

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other Mach numbers are within ± 0.01 of the approximate given Mach number, except for $M \approx 0.71$ and 0.83 which are within ± 0.02 of the given Mach number. Data for a flap deflection of about 7° at Mach numbers of about 0.71 , 0.76 , and 0.80 are tabulated in tables XV to XVII.

RESULTS AND DISCUSSION

Chordwise Load Distribution

Representative chordwise load distributions selected from the tabulated data are presented as oblique projections in figures 4 to 9. Information concerning the upper and lower surface pressure distributions which result in these load distributions may be obtained from references 1 and 4.

Effect of angle of attack.- In general, the chordwise load distributions are similar at each wing station. As the angle of attack increased, an appreciable load quickly developed over the forward 20-percent chord resulting from the relatively sharp leading edge. At the lower Mach numbers tested the load at the leading edge reached a maximum at an angle of attack below maximum lift, at which point the leading-edge load suddenly decreased. At the higher Mach numbers tested the load at the leading edge increased until maximum lift was reached. According to references 5 and 6, the loss in leading-edge load at the lower Mach numbers resulted from separation of the flow over the upper surface of the leading edge. These references show that the leading-edge separation is a characteristic which occurs at Mach numbers less than 0.9 for airfoils with small leading-edge radii. Reference 7, which presents tuft pictures for an 0.16-scale model of the X-3 airplane in the Ames 16-foot high-speed wind tunnel, reports that at Mach numbers less than 0.8 the flow separated from the leading edge and progressed rearward to the trailing edge. At Mach numbers greater than 0.9 separation on the model began at the trailing edge and progressed forward.

At the intermediate Mach numbers of 0.83 , 0.88 , and 0.92 the influence of shock waves may be seen in the chordwise load distributions. The shock waves caused an abrupt decrease in load and a down-load near the trailing edge. At the supersonic Mach numbers the increase in load with increasing angle of attack was uniform at each chord station, unlike the subsonic Mach numbers.

Effect of Mach number.- Figure 10 shows the effect of Mach number on the load distribution over the midsemispan orifice station at $\alpha \approx 6^\circ$. Since the chordwise load distributions are similar at all the stations, figure 10 shows the changes with Mach number that are common to all the stations at low and moderate angles of attack. At $M \approx 0.71$ the chordwise loading was triangular, with most of the load occurring over the

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forward 50-percent chord. As the Mach number increased to 1.15, shock waves formed over the center of the wing section and moved rearward to the trailing edge, resulting in a rearward movement of the load.

Leading-edge separation boundary.- The approximate boundary for the leading-edge flow separation discussed previously was determined for the X-3 wing by plotting the differential pressure coefficient for the orifice closest to the leading edge against angle of attack and by noting the angle of attack at which C_p ceased to increase. Figure 11 shows representative plots at $M \approx 0.71$, 0.88, and 0.96. At $M \approx 0.96$ and greater, there was no clear indication of leading-edge separation below maximum lift. In figure 12 the results obtained from the differential pressure plots are shown for the root, midsemispan, and tip orifice stations. At $M \approx 0.71$ the flow separated first at the midsemispan at $\alpha \approx 4.5^\circ$ and spread to the tip and the root as the angle of attack increased to 80° . At $M \approx 0.88$ the flow separated first at the tip at $\alpha \approx 9^\circ$ and spread to the root at $\alpha \approx 12.5^\circ$. At $M \approx 0.92$ the flow separated along the entire leading edge at $\alpha \approx 13^\circ$. No leading-edge separation was evident below maximum lift at Mach numbers greater than 0.92.

Wing-Section Aerodynamic Characteristics

The variation with lift of the wing-section aerodynamic characteristics is presented in figure 13. Mach number effects are shown in figure 14 and the effect of spanwise location is shown in figure 15.

Section normal-force coefficient.- Figure 13 shows that the variation of c_n with α at each orifice station was essentially linear to near maximum lift for $M \approx 0.71$ and 0.77 and for Mach numbers of 0.92 and greater. At the intermediate Mach numbers of 0.83, 0.88, and 0.90, however, the c_n curves experienced an increase in slope below $c_n \approx 0.5$ and were erratic above this value. The chordwise load distributions indicate that the change in slope and erratic behavior of the normal-force curves resulted from abrupt movements of shock waves over the center portion of the modified hexagonal wing section and from flow separation (near maximum lift) from the leading edge.

At $M \approx 0.71$ maximum c_n varied from about 0.75 at the inboard stations to 0.58 at the tip. At Mach numbers greater than 1.0, maximum c_n was about 0.5 greater than at $M \approx 0.71$. The low maximum lift at the lower Mach numbers resulted from separation of the flow at the leading edge, which was discussed previously. This type stall has been called "thin airfoil stall" in reference 8. Included in this reference are the low-speed characteristics of a modified 4.23-percent-thick double-wedge airfoil which stalled at a lift coefficient of about 0.85, much lower than the thicker airfoils tested.

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Figure 14(a) shows the variation with Mach number of the section normal-force coefficient for the midsemispan orifice station at several angles of attack. The figure shows that c_n increased rapidly between $M = 0.80$ and 0.95 , the largest increase occurring at the higher angles of attack. At $\alpha = 12^\circ$ the increase in c_n with Mach number was especially large, since the wing was stalled at Mach numbers less than about 0.9.

Figure 14(b) shows the variation with Mach number of c_n curve slopes for the midsemispan orifice station at $\alpha = 3^\circ$ and 6° . At $\alpha = 3^\circ$ the slope increased with Mach number from a subsonic value of about 0.08 to a sonic value of about 0.13, then decreased to about 0.11 at $M = 1.15$. At $\alpha = 6^\circ$ the slopes were about the same except for the Mach number region of 0.80 to 0.95 where the slopes increased, resulting in an additional peak in the curve at $M \approx 0.88$.

Figure 15 shows that the normal-force characteristics of each wing section are similar. The section normal-force coefficient was slightly higher at the midsemispan orifice station than at the root or the tip stations, and the c_n curve slopes were about the same except for a slight decrease at the root orifice station.

Section pitching-moment coefficient. - In general, over the Mach number range from 0.71 to 0.92 the section pitching-moment coefficient about the quarter chord had an unstable variation with c_n over the lower c_n range (fig. 13). At moderate normal-force coefficients the variation gradually became stable. The change in slope apparently was caused by the rearward movement of separated flow from the leading edge, which has been discussed previously. The c_m curves at each wing section at these Mach numbers are similar to the low-speed pitching-moment characteristics of the 4.23-percent-thick modified double-wedge airfoil in reference 8. At $M \approx 0.88$, 0.90 , and 0.92 the pitching-moment curves are erratic, similar to the c_n curves in this region. As the Mach number increased to 1.15 the variation of c_m with c_n became stable, except for the low-lift range at the tip where the variation was unstable at all Mach numbers tested. The stable (and almost linear) variations at these Mach numbers resulted from the uniform increase in normal load at each wing section compared to the nonuniform changes at the lower Mach numbers.

It was reported in reference 1 from preliminary data that during the maneuver at $M \approx 0.94$ an unstable break occurred in the c_m curve at $c_n \approx 0.60$ and that the curve became stable again at $c_n \approx 0.70$. Examination of the more complete data in figure 13(c) reveals that the unstable break reported in reference 1 was a Mach number effect rather than a lift effect. During the unstable break the Mach number decreased from 0.94 to

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0.92 and as shown in figure 13(c), the level of c_m changes considerably between Mach numbers from 0.92 to 0.96.

Section center of pressure.- In general, the section center of pressure moved rearward with increasing normal-force coefficient (fig. 13). The rearward movement was small for the inboard stations (below wing stall), but amounted to about 40-percent chord at the tip.

Figure 14(c) includes the effect of Mach number on the section center of pressure for the midsemispan orifice station at $\alpha = 3^\circ, 6^\circ, 9^\circ$, and 12° . In general, between $M = 0.85$ and 0.95 the section center of pressure moved rearward, the rearward movement decreasing as the angle of attack increased. The load distributions in figure 10 show that the rearward movement of the section center of pressure occurred as a result of the increase in load over the rear part of the wing section as the shock waves moved rearward to the trailing edge. Figure 15 shows that the center-of-pressure movement was similar at each wing section, but that the center of pressure was located about 10 percent farther to the rear at the root than at the tip.

Spanwise Distributions

Spanwise load distributions.- Spanwise normal-load distributions are presented in figure 16 for representative Mach numbers and angles of attack. The shape of the distributions does not change appreciably over the Mach number and lift range tested, except at $\alpha \approx 3^\circ$ where the load at the wing tip is consistently low at all Mach numbers presented. The probable cause of this condition is the control-actuator fairing on the lower surface near the last orifice station. Wing stall had little effect on the shape of the distributions. The apparent change in shape in figure 16(b) at $\alpha = 10.1^\circ$ was caused by excessive aileron deflection.

Comparison of the load distributions at $M \approx 0.71$ with the theoretical methods of references 9 and 10 is made in figure 17. The charts in reference 9 were used to obtain the load distribution for the wing alone, and the method of reference 10 was used to calculate the wing load in the presence of the fuselage. In using reference 9 a section lift-curve slope of 2π per radian was used, resulting in an aspect ratio parameter $\beta A/k$ of 2.18. The assumed value of section lift-curve slope is reasonable according to the data for the modified 4.23-percent-thick double-wedge airfoil in reference 8. This airfoil had a lift-curve slope of about 0.118 per degree at low speed. Figure 17 is presented to compare the shape of the distribution with that obtained by theory, therefore the unit normal-load parameter was plotted for the portion of the distribution over the wing panel. Included in figure 17 is the portion of an elliptical distribution for the wing panel.

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At moderate angles of attack (6.2° and 9.6°) the experimental distributions are nearly elliptical and the method of reference 9, which neglects the fuselage effects, is adequate in predicting the shape of the distribution. However, by using the method of reference 10, which accounts for fuselage effects at these angles, the load increases over the inboard semispan. Use of this method would cause the bending moment at the root of the wing to be slightly underestimated. At low lift ($\alpha = 3.2^\circ$) the experimental distribution does not agree with either of the theoretical methods.

Spanwise pitching-moment distribution.- The spanwise distributions of pitching moment about $0.25c'$ for representative Mach numbers and angles of attack are shown in figure 18. At the lower Mach numbers tested, the pitching moment became more positive at the inboard stations and more negative at the outboard stations as angle of attack increased. After leading-edge flow separation occurred, the pitching moment at the inboard stations quickly decreased. As the Mach number increased to 0.99, the change in pitching moment at the fuselage decreased to near zero. At supersonic Mach numbers the pitching moment increased negatively at all stations as the angle of attack increased.

Wing-Panel Aerodynamic Characteristics

The variation with lift of the wing-panel aerodynamic characteristics is presented in figure 19. The data presented at high angles of attack were in some cases insufficient to obtain a fairing of C_N' with α , however the variation of C_{NA} with angle of attack was used as a guide. Mach number effects are shown in figures 20 and 21.

Wing-panel normal-force coefficient.- The maximum normal-force coefficient of the wing panel was 0.66 at $M \approx 0.71$ and about 1.2 at supersonic Mach numbers (fig. 19(a)). Early separation of the flow from the leading edge was a contributing factor to the low maximum lift at Mach numbers less than 0.9, as discussed previously. The variation of C_N' with α in figure 19(a) was linear except in the transonic region of $M = 0.83$ to $M = 0.92$ where, because of the erratic wing-section behavior, the wing-panel variation was also erratic. At all Mach numbers tested, zero normal-force coefficient appears to occur at a positive angle of attack of from 1° to 2° . This is caused, in part at least, by the effects of the control-actuator fairings on the lower surface, which would tend to produce a down load at zero angle of attack.

The variation of C_N' with Mach number is shown in figure 20(a) at several angles of attack. The characteristics are similar to the wing section data. Comparison of C_N' with C_{NA} in figure 20(a) shows that

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the airplane normal-force coefficient experienced the same variation with Mach number as was experienced by the wing-panel normal-force coefficient.

The variation $dC_N'/d\alpha$ with M (fig. 20(b)) was similar to that shown for the wing section. At $\alpha = 3^\circ$ the slope was about 0.076 per degree from $M = 0.71$ to $M = 0.83$. Between $M = 0.83$ and 1.00 the slope increased to 0.116 per degree, then decreased to 0.100 per degree at $M = 1.15$. The experimental slope of 0.076 per degree at $M = 0.71$ is higher than the theoretical values of 0.064 per degree from reference 9 and 0.061 per degree from reference 10. The variation of the normal-force-curve slope of the airplane was similar to that of the wing panel.

The contribution of the wing to the total normal force is shown in figure 21. As the angle of attack increased, the contribution of the wing decreased. At $\alpha = 6^\circ$ the wing contributed about 70 percent of the total normal force throughout the Mach number range presented.

Wing-panel pitching-moment coefficient. - Similar to most unswept wings, the X-3 wing had an unstable variation of C_m' with C_N' at low transonic Mach numbers (fig. 19(b)), except at high lift where flow separation changed the variation from unstable to stable. In the discussion of the wing-section characteristics, the separation was shown to start on the upper surface at the leading edge and to move rearward to the trailing edge. At $M = 0.83$ to 0.92 the C_m' curves were erratic because of the erratic wing-section behavior. As the Mach number increased, the wing became stable as a result of the rearward movement of the shock waves to the trailing edge.

Wing-panel bending-moment coefficient. - The variation of C_b' with C_N' was essentially linear at all Mach numbers (fig. 19(c)). At $M = 0.83$ to 0.92 there was little effect of the erratic wing-section behavior on the bending moment, which shows that the flow changes occurring at these Mach numbers were primarily chordwise, not spanwise changes. The slopes of the C_b' curves are constant with Mach number.

Wing-panel center of pressure. - At $M = 0.71$ to 0.83 the chordwise location of the center of pressure (fig. 19(d)) was constant at low lift, but moved rearward after the flow about the leading edge separated. At $M > 0.83$ the center of pressure moved rearward with increasing lift. The variation of the chordwise location with Mach number is shown in figure 20(c). The center-of-pressure movement of the wing panel was similar to that of the wing section in that it moved rearward between $M = 0.85$ and 0.95, the rearward movement decreasing as the angle of attack increased.

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The spanwise location of the center of pressure (fig. 19(e)) was relatively constant with lift and Mach number at about 42 percent $b'/2$ at all Mach numbers tested.

Comparison With Wind-Tunnel Data

A comparison of flight data with wind-tunnel results at Mach numbers from 0.71 to 0.92 is shown in figures 22 to 24. The wind-tunnel data of reference 4 covered a Mach number range from 0.60 to 0.92, therefore the comparison is limited to subsonic and transonic speeds. Included in the comparisons are preliminary flight data from reference 1. Differences between the present data and preliminary flight data are evident, however the present data are considered more reliable. The difference in normal-force coefficient can be explained as resulting from a sparcity of measured points along the chord in the preliminary data particularly in the vicinity of the wing shock, a more refined airspeed calibration, and some discrepancy in the preliminary angle-of-attack measurements.

In general, the wind-tunnel and flight results are in good agreement below a Mach number of 0.90 and in fair agreement at Mach numbers of 0.90 and 0.92. At Mach numbers of 0.90 and 0.92 the normal-force coefficient for the wind-tunnel data is lower than that for the flight data over most of the lift range. The chordwise load distributions of figure 22(b) at $M = 0.92$ show good agreement in shape and location of the wing shock, however the differences in level may be associated with differences in angle of attack between the wind-tunnel and flight measurements. As a result of these differences, the spanwise load distributions in figure 24(b) at $M = 0.92$ do not agree in level, however the shape of the distributions would seem to be comparable.

Effect of Leading-Edge Flap Deflection

Preliminary data presented in figure 25 show the effect on the wing-panel aerodynamic characteristics of deflecting the leading-edge flap an average of 7° at $M = 0.71$, 0.76 , and 0.80 . At $M = 0.71$ and 0.76 the deflected flap increased the maximum normal-force coefficient about 0.06 but did not appreciably change the portion of the C_N' curve below $C_N' = 0.6$. The deflected flap decreased the pitching-moment coefficient slightly and delayed the break from an unstable to a stable variation to a higher angle of attack, undoubtedly the result of a delay in leading-edge separation. Bending moment was unaffected. No change in spanwise center-of-pressure location occurred, however the chordwise location was more to the rear at lower angles of attack and slightly farther forward at higher angles of attack.

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CONCLUDING REMARKS

Wing loads and load distributions were obtained by pressure measurements over the left wing of the Douglas X-3 research airplane. The data cover the range from near zero lift to maximum lift and from a Mach number of 0.71 to 1.15.

The chordwise load distributions and the wing-section aerodynamic characteristics were similar at each wing station. A large load developed at the leading edge resulting from the relatively sharp leading edge. At Mach numbers below 0.9 separation of the flow from the leading edge resulted in a loss in leading-edge load and a low maximum lift. The maximum normal-force coefficient of the wing panel was 0.66 at a Mach number of 0.71 compared to 1.2 at supersonic Mach numbers. Spanwise load distributions were essentially elliptical throughout the lift and Mach number range tested. Values of normal-force-curve slope ranged from 0.076 per degree at a Mach number of 0.71 to 0.116 per degree at a Mach number of 1.0. Variation of pitching moment with lift was unstable at the lower Mach numbers, becoming increasingly stable above a Mach number of about 0.9. The chordwise location of the center of pressure varied with angle of attack between 15- and 30-percent chord at subsonic Mach numbers and between 31- and 37-percent chord at supersonic Mach numbers. The spanwise location of the center of pressure was relatively constant with lift and Mach number at about 42 percent of the panel span. The flight results are in good agreement with wind-tunnel results at Mach numbers below 0.90 and in fair agreement at Mach numbers of 0.90 and 0.92.

Deflecting the leading-edge flap about 7° over a Mach number range of 0.71 to 0.80, increased the maximum normal-force coefficient about 0.06 and moved the center of pressure rearward at the lower angles of attack and slightly forward at the higher angles of attack. No change occurred in the spanwise location of the center of pressure.

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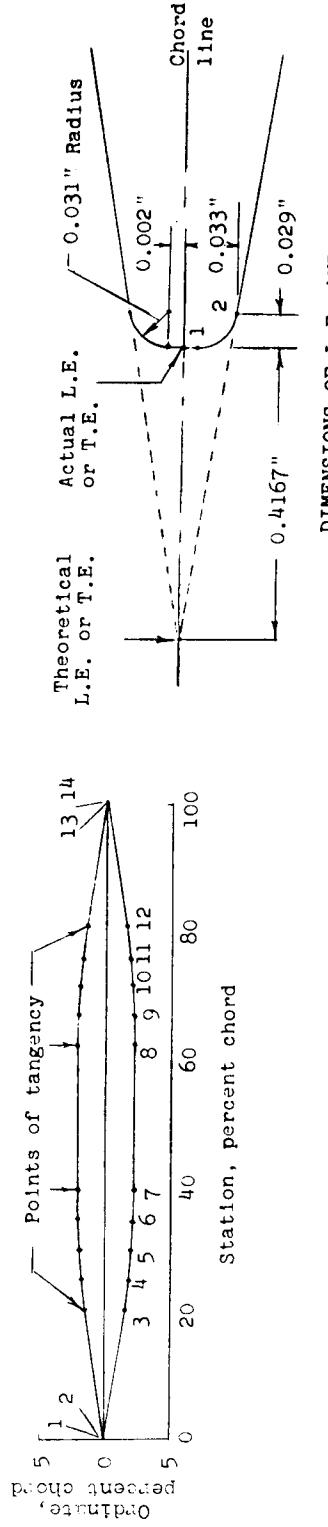
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TABLE I.- PHYSICAL CHARACTERISTICS OF THE DOUGLAS X-3 AIRPLANE

Wing:	
Airfoil section	Modified hexagon
Airfoil thickness ratio, percent chord	4.5
Total area, sq ft	166.50
Span, ft	22.69
Mean aerodynamic chord (wing station 4.81 ft), ft	7.84
Root chord, ft	10.58
Tip chord (extended), ft	4.11
Taper ratio	0.39
Aspect ratio	3.09
Sweep at 0.75 chord line, deg	0
Sweep at leading edge, deg	25.16
Sweep at trailing edge, deg	-8.12
Incidence, deg	0
Dihedral, deg	0
Geometric twist, deg	0
Leading-edge flap:	
Type	Plain
Area (each), sq ft	8.38
Span at hinge line (each), ft	8.916
Chord, normal to hinge line, in.	11.49
Travel, leading edge down, deg	30
Wing panel (outboard of wing station 3.415 ft):	
Area (one panel), sq ft	50.42
Span (one panel), ft	7.93
Mean aerodynamic chord (wing station 6.85 ft), ft	6.68
Average chord, ft	6.37
Horizontal tail:	
Airfoil section	Modified hexagon
Airfoil thickness ratio at root chord, percent chord	8.01
Airfoil thickness ratio outboard of station 26, percent chord	4.50
Total area, sq ft	43.24
Span, ft	13.77
Mean aerodynamic chord, ft	3.34
Root chord, ft	4.475
Tip chord, ft	1.814
Taper ratio	0.405
Aspect ratio	4.38
Sweep at leading edge, deg	21.14
Sweep at trailing edge, deg	0
Dihedral, deg	0
Travel:	
Leading edge up, deg	6
Leading edge down, deg	17
Hinge-line location, percent root chord	46.46
Vertical tail:	
Airfoil section	Modified hexagon
Airfoil thickness ratio, percent chord	4.5
Area, sq ft	23.73
Span, (from horizontal-tail-hinge line), ft	5.59
Mean aerodynamic chord, ft	4.69
Root chord, ft	6.508
Tip chord, ft	1.93
Taper ratio	0.292
Aspect ratio	1.315
Sweep at leading edge, deg	45
Sweep at trailing edge, deg	9.39
Rudder:	
Area, rearward of hinge line, sq ft	5.441
Span at hinge line, ft	3.535
Root chord, ft	1.98
Tip chord, ft	1.097
Travel, deg	±20
Fuselage:	
Length including boom, ft	66.75
Maximum width, ft	6.08
Maximum height, ft	4.81
Base area, sq ft	7.94
Powerplant:	
Engines	Two Westinghouse J34-WE-17 with afterburner
Rating, each engine:	
Static sea-level maximum thrust, lb	4,850
Static sea-level military thrust, lb	3,370
Airplane weight, lb:	
Basic (without fuel, oil, water, pilot)	16,120
Total (full fuel, oil, water, no pilot)	21,900
Center-of-gravity location, percent mean aerodynamic chord:	
Basic weight - gear down	2.63
Total weight - gear down	4.59
Total weight - gear up	3.91

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TABLE II
PROFILE AND ORDINATES OF THE WING SECTIONS AT THE ORIFICE STATIONS
[Modified 4.5-percent-thick hexagonal airfoil]



DIMENSIONS OF L.E. AND T.E.
(Same at all stations)

Stations and ordinates in percent of local chord

Station number	Row 1		Row 2		Row 3		Row 4		Row 5	
	Station	Ordinate								
1	0	+0.002	0	+0.002	0	+0.003	0	+0.003	0	+0.004
2	• 028	+• 032	• 032	+• 036	• 037	+• 042	• 043	+• 049	• 052	+• 059
3	22.382	+1.709	21.333	+1.634	19.948	+1.536	18.238	+1.414	15.998	+1.255
4	25.990	+1.916	25.338	+1.904	24.709	+1.848	23.812	+1.781	22.643	+1.691
5	29.604	+2.115	29.549	+2.096	29.477	+2.072	29.466	+2.041	29.300	+2.002
6	33.219	+2.216	33.663	+2.212	34.246	+2.206	34.969	+2.198	35.960	+2.189
7	36.836	+2.250	37.779	+2.250	39.023	+2.250	40.554	+2.250	42.625	+2.251
8	63.602	+2.250	62.721	+2.250	61.558	+2.250	60.120	+2.250	58.264	+2.251
9	67.000	+2.218	66.587	+2.214	66.043	+2.208	65.365	+2.201	64.524	+2.192
10	70.397	+2.123	70.451	+2.105	70.526	+2.082	70.610	+2.053	70.782	+2.016
11	73.791	+1.901	74.314	+1.925	75.005	+1.872	75.850	+1.809	77.055	+1.725
12	77.183	+1.741	78.172	+1.671	79.480	+1.579	81.116	+1.465	83.282	+1.314
13	99.972	+• 032	99.968	+• 036	99.962	+• 042	99.953	+• 049	99.998	+• 059
14	100.000	+• 002	100.000	+• 002	100.000	+• 003	100.000	+• 003	100.000	+• 004

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TABLE III
CHORDWISE LOCATIONS OF THE STATIC PRESSURE ORIFICES
[Percent local chord]

Row Orifice	1			2			3			4			5		
	Upper	Lower	Average												
1	2.1	2.1	2.1	2.6	2.2	2.4	2.5	2.5	2.5	2.5	2.5	2.5	5.2	5.2	5.2
2	5.0	5.0	5.0	4.9	4.7	4.8	4.8	4.9	4.9	5.0	5.0	5.0	7.5	7.5	7.5
3	7.8	7.6	7.7	7.6	7.5	7.6	7.3	7.4	7.4	7.5	7.5	7.5	14.2	14.2	14.2
4	9.3	9.0	9.2	10.0	9.9	10.0	10.1	10.1	10.1	10.2	10.3	10.3	25.0	25.0	25.0
5	15.3	15.1	15.2	15.2	15.2	15.2	17.2	17.8	18.0	17.9	17.9	17.9	29.5	29.5	29.5
6	20.0	19.9	20.0	21.3	21.2	21.3	20.2	20.3	20.3	20.5	20.5	20.5	38.0	38.0	38.0
7	25.0	24.9	25.0	24.9	24.8	24.9	24.4	24.4	24.4	25.1	25.2	25.2	47.5	47.5	47.5
8	29.5	29.6	29.6	32.8	32.8	33.0	29.5	29.6	29.6	29.2	29.4	29.4	62.0	62.0	62.0
9	37.4	37.4	37.4	38.1	37.8	38.0	37.9	37.9	37.9	37.9	37.9	37.9	68.2	68.2	68.2
10	47.6	47.5	47.6	47.5	47.5	47.5	47.4	47.4	47.4	47.4	47.4	47.4	75.7	75.7	75.7
11	55.5	55.4	55.5	55.5	55.5	55.5	54.8	55.0	55.0	55.0	55.0	55.0	79.9	79.9	79.9
12	62.0	62.0	62.0	62.0	62.0	62.0	61.8	61.9	61.9	64.6	64.6	64.6	84.5	84.5	84.5
13	69.0	69.0	69.0	68.9	68.9	68.9	68.8	68.7	68.7	68.7	68.7	68.7	68.5	68.5	68.5
14	74.2	74.1	74.2	74.2	74.0	74.2	74.1	74.1	74.1	74.0	74.1	74.0	75.3	75.3	75.3
15	80.0	80.0	80.0	80.0	80.0	80.0	79.8	79.9	80.0	80.0	80.0	80.0	79.9	79.9	79.9
16	85.4	85.4	85.5	85.0	85.0	85.2	85.0	84.8	84.8	84.9	85.0	85.0	84.9	84.9	84.9
17	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0
18	92.5	92.5	92.5	92.5	92.5	92.5	92.6	92.4	92.5	92.5	92.5	92.5	92.4	92.4	92.4
19	98.3	98.3	98.3	98.1	98.1	98.2	97.9	97.9	97.9	97.7	97.7	97.7	97.4	97.4	97.4

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TABLE IV
PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE DOUGLAS X-3 WING

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
(a) $M = 0.70$ $C_{NA} = 0.06$	$\alpha = 3.2^\circ$ $\delta_{aL} = 0^\circ$	$[M \approx 0.71]$	(b) $M = 0.71$ $C_{NA} = 0.11$	$\alpha = 3.7^\circ$ $\delta_{aL} = 0^\circ$							
1	0.555	0.975	1.200	1.115	0.701	1	0.836	1.388	1.457	1.280	0.838
2	•470	•434	•691	•937	•581	2	•580	•610	•989	•154	•810
3	•305	•340	•366	•634	•141	3	•449	•415	•615	•992	•289
4	•307	•307	•235	•359	•052	4	•411	•360	•254	•670	•060
5	•198	•188	•127	•195	•054	5	•309	•265	•204	•305	•088
6	•187	•215	•184	•140	•079	6	•241	•246	•237	•184	•069
7	•186	•094	•165	•117	•036	7	•229	•161	•220	•150	•089
8	•105	•203	•231	•227	•018	8	•171	•211	•273	•247	•026
9	•140	•126	•154	•090	—	9	•156	•141	•151	•106	•018
10	•078	•108	•106	•081	—	10	•093	•177	•131	•088	•097
11	•074	•059	•090	•055	—	11	•100	•083	•141	•054	—
12	•069	•090	•018	•009	—	12	•060	•106	•035	•035	—
13	•032	•045	•018	•027	—	13	•055	•027	•035	•027	•000
14	•098	•063	•058	•035	—	14	•123	•062	•041	•000	—
15	•018	•000	—	•027	—	15	•000	—	•009	•018	•063
16	•027	•017	•018	—	•045	16	•044	•034	•035	—	•009
17	—	•009	•045	•027	—	17	—	•009	•035	—	•044
18	—	•017	•036	•018	—	18	—	•017	•018	—	•018
19	•009	•053	•053	•028	•037	19	•009	•061	•027	—	—
c_m	0.125	0.152	0.156	0.144	0.077	c_m	0.164	0.193	0.193	0.194	0.127
c_m	.0000	.0002	.0051	.0206	.0195	c_m	.0019	.0032	.0055	.0232	.0184
c_w'	0.135	$x'_{cp} = 19.2$	$y'_{cp} = 40.9$			$c_w' = 0.177$	$x'_{cp} = 19.5$	$y'_{cp} = 42.0$			
c_b'	.0078					$c_b' = .0097$					
	.055					$c_b' = .074$					

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TABLE III
CHORDWISE LOCATIONS OF THE STATIC PRESSURE ORIFICES
[Percent local chord]

Row Orifice	1			2			3			4			5		
	Upper	Lower	Average												
1	2.1	2.1	2.1	2.6	2.2	2.4	2.5	2.5	2.5	2.5	2.5	2.5	5.2	5.2	5.2
2	5.0	5.0	5.0	4.9	4.7	4.8	4.8	4.9	4.9	5.0	5.0	5.0	7.5	7.5	7.5
3	7.8	7.6	7.7	7.6	7.5	7.6	7.4	7.4	7.4	7.5	7.5	7.5	14.4	14.2	14.3
4	9.3	9.0	9.2	10.0	9.9	10.0	10.1	10.1	10.1	10.3	10.3	10.3	24.6	25.0	24.8
5	15.3	15.1	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	15.2	29.3	29.5	29.3
6	20.0	19.9	20.0	21.3	21.3	21.3	20.2	20.3	20.3	20.5	20.5	20.5	38.0	38.0	38.0
7	25.0	24.9	25.0	24.9	24.9	24.9	24.4	24.4	24.4	25.2	25.2	25.2	47.4	47.5	47.4
8	29.5	29.6	29.6	33.1	32.8	33.0	29.5	29.6	29.6	29.4	29.4	29.4	62.0	62.0	62.0
9	37.4	37.4	37.4	38.1	37.8	38.0	37.9	37.9	37.9	37.9	37.9	37.9	68.3	68.3	68.3
10	47.6	47.6	47.6	47.5	47.5	47.5	47.3	47.4	47.4	47.4	47.4	47.4	75.7	75.7	75.7
11	55.5	55.4	55.5	55.0	55.0	55.0	54.8	54.8	55.0	55.0	55.0	55.0	80.2	80.2	80.1
12	62.0	62.0	62.0	62.0	62.0	62.0	61.8	61.8	61.8	64.6	64.6	64.6	84.6	84.6	84.6
13	69.0	69.0	69.0	68.9	68.9	68.9	68.7	68.7	68.7	68.7	68.7	68.7	90.0	90.0	90.0
14	74.2	74.1	74.2	74.2	74.2	74.2	74.1	74.1	74.1	74.1	74.1	74.1	92.4	92.4	92.4
15	80.0	80.0	80.0	80.0	80.0	80.0	79.8	79.8	79.8	80.0	80.0	80.0	97.4	97.4	97.4
16	85.4	85.4	85.4	85.0	85.0	85.0	84.8	84.8	84.8	85.0	85.0	85.0	84.9	84.9	84.9
17	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0	90.0
18	92.5	92.5	92.5	92.5	92.5	92.5	92.4	92.4	92.4	92.5	92.5	92.5	97.7	97.7	97.7
19	98.3	98.3	98.3	98.2	98.2	98.2	97.9	97.9	97.9	97.7	97.7	97.7	92.4	92.4	92.4

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TABLE IV.- Continued.

[$M \approx 0.71$]

(e) $M = 0.71$
 $C_{NA} = 0.26$
 $\alpha = 5.4^\circ$
 $\delta_{a_L} = 0.1^\circ$ down

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.749	1.983	1.504	1.693	1.212	1	1.934	2.145	1.535	1.855	1.301
2	1.239	1.870	1.259	1.608	1.139	2	1.456	2.053	1.328	1.739	1.249
3	.868	1.296	1.259	1.523	.758	3	1.060	1.596	1.270	1.698	.930
4	.921	.659	1.128	1.380	.294	4	1.006	.911	1.185	1.492	.433
5	.593	.485	.808	.961	.207	5	.642	.604	.920	1.083	.299
6	.505	.458	.675	.383	.143	6	.589	.499	.866	.524	.183
7	.369	.316	.545	.338	.140	7	.487	.447	.697	.446	.147
8	.369	.345	.456	.356	.017	8	.410	.375	.595	.490	.059
9	.278	.285	.261	.173	.000	9	.337	.291	.370	.248	.000
10	.191	.242	.205	.146	~	10	.230	.300	.228	.171	~
11	.160	.154	.147	.106	~	11	.150	.177	.154	.113	.017
12	.142	.130	.086	.043	~	12	.124	.198	.060	.042	~
13	.077	.096	.009	~	.009	13	.076	.069	.026	.000	.000
14	.146	.087	.072	~	.043	14	.144	.069	.063	~	.034
15	.025	.051	~	.026	~	15	.025	.042	.042	.009	.000
16	.026	.042	.068	~	.043	16	.042	.058	.017	~	.034
17	~	.009	.034	~	.009	17	.026	.051	.026	.017	~
18	~	.008	.052	~	.026	18	~	.008	.043	.008	~
19	~	.025	.043	.027	.009	19	.017	.017	.044	.026	~
c_a	0.331	0.349	0.368	0.324	0.262	c_a	0.371	0.404	0.411	0.383	0.314
c_m	.0111	.0119	.0116	.0374	.0231	c_m	.0132	.0142	.0145	.0381	.0244

(f) $M = 0.72$
 $C_{NA} = 0.31$
 $\alpha = 6.2^\circ$
 $\delta_{a_L} = 0.2^\circ$ down

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.934	2.145	1.535	1.855	1.301	1	1.934	2.145	1.535	1.855	1.301
2	1.456	2.053	1.328	1.739	1.249	2	1.456	2.053	1.328	1.739	1.249
3	1.060	1.596	1.270	1.698	.930	3	1.060	1.596	1.270	1.698	.930
4	1.006	.911	1.185	1.492	.433	4	1.006	.911	1.185	1.492	.433
5	.642	.604	.920	1.083	.299	5	.642	.604	.920	1.083	.299
6	.589	.499	.866	.524	.183	6	.589	.499	.866	.524	.183
7	.487	.447	.697	.446	.147	7	.487	.447	.697	.446	.147
8	.410	.375	.595	.490	.059	8	.410	.375	.595	.490	.059
9	.337	.291	.370	.248	.000	9	.337	.291	.370	.248	.000
10	.230	.300	.228	.171	~	10	.230	.300	.228	.171	~
11	.150	.177	.154	.113	.017	11	.150	.177	.154	.113	.017
12	.124	.198	.060	.042	~	12	.124	.198	.060	.042	~
13	.076	.069	.026	.000	.000	13	.076	.069	.026	.000	.000
14	.144	.069	.063	~	.034	14	.144	.069	.063	~	.034
15	.025	.042	.042	.009	.000	15	.025	.042	.042	.009	.000
16	.042	.058	.058	.017	~	16	.042	.058	.058	.017	~
17	~	.026	.051	.026	.017	17	~	.026	.051	.026	.017
18	~	.008	.043	~	.008	18	~	.008	.043	.008	~
19	~	.025	.043	.027	.009	19	~	.017	.017	.044	.026
c_a	0.371	0.404	0.411	0.383	0.314	c_a	0.371	0.404	0.411	0.383	0.314
c_m	.0132	.0142	.0145	.0381	.0244	c_m	.0132	.0142	.0145	.0381	.0244

$x'_{cp} = 18.8$
 $y'_{cp} = 41.5$

$x'_{cp} = 0.373$
 $y'_{cp} = 41.9$

$x'_{cp} = 0.220$
 $y'_{cp} = 157$

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TABLE IV.- Continued.

 $[M \approx 0.71]$

(c) $M = 0.71$
 $C_{NA} = 0.16$
 $\alpha = 4.2^\circ$
 $\delta_{aL} = 0^\circ$

(d) $M = 0.71$
 $C_{NA} = 0.20$
 $\alpha = 4.6^\circ$
 $\delta_{aL} = 0.1^\circ$ down

Orifice	Row				
	1	2	3	4	5
1	1.201	1.639	1.721	1.410	0.939
2	•747	1.010	1.292	1.252	0.922
3	•545	•477	•846	1.125	•479
4	•559	•503	•375	•903	•144
5	•361	•330	•256	•579	•052
6	•317	•323	•279	•272	•110
7	•270	•227	•297	•159	•070
8	•259	•266	•291	•301	•009
9	•217	•183	•210	•139	-
10	•125	•183	•172	•130	-
11	•090	•096	•148	•062	-
12	•084	•140	•061	•051	-
13	•085	•079	•052	-	•035
14	•112	•088	•064	•000	-
15	•034	•009	•017	-	•080
16	•026	•025	•043	-	•009
17	-	•018	•052	•035	-
18	-	•008	•009	•026	-
19	-	•009	•043	-	•018

Orifice	Row				
	1	2	3	4	5
1	1	1.426	1.613	1.829	1.473
2	2	•895	1.381	1.323	1.374
3	3	•634	•871	•957	1.235
4	4	•641	•547	•578	1.039
5	5	•416	•374	•344	•666
6	6	•350	•368	•389	•316
7	7	•303	•261	•319	•204
8	8	•270	•300	•346	•300
9	9	•261	•226	•201	•139
10	10	•158	•191	•188	•104
11	11	•107	•106	•147	•106
12	12	•101	•113	•069	•034
13	13	•077	•079	•035	-
14	14	•120	•070	•072	-
15	15	•026	•017	-	•009
16	16	-	•009	•034	-
17	17	-	•018	•077	-
18	18	-	•017	•026	•000
19	19	-	•008	•060	•018

c_n	0.218	0.269	0.244	0.161
c_m	.0049	.0060	.0061	.0260
c_b	.0226	$x'_{cp} = 19.3$	$y'_{cp} = 41.6$.0225
c_n'	.0049	$x'_{cp} = 19.3$	$y'_{cp} = 41.7$.0228
c_m'	.0128			.0291
c_b'	.094			.0228

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LINE IV.- Continued.

$$(1) \quad M = 0.72 \quad \alpha = 8.3^{\circ} \quad \delta_{a_L} = 0.4^{\circ} \text{ down}$$

$$C_{N_A} = 0.46 \quad \beta = 0.73 \quad C_{N_A} = 0.54$$

$$(J) \quad M = 0.73 \quad \alpha = 9.6^{\circ} \quad \delta_{a_L} = 0.2^{\circ} \text{ down}$$

Orifice	Row					C_{in}^{I}	$C_{\text{in}}^{\text{II}}$	$C_{\text{in}}^{\text{III}}$
	1	2	3	4	5			
1	1.979	1.698	1.729	1.515	1.120			
2	1.900	1.681	1.533	1.446	1.145			
3	1.733	1.618	1.512	1.388	.981			
4	1.784	1.577	1.410	1.350	.728			
5	1.397	1.336	1.155	1.143	.684			
6	1.047	1.282	1.124	1.028	.626			
7	.907	1.010	1.015	.892	.545			
8	.761	.889	1.037	.922	.286			
9	.593	.694	.762	.732	.200			
10	.449	.605	.628	.658	.024			
11	.315	.355	.483	.549	.155			
12	.249	.275	.249	.357	.130			
13	.129	.081	.176	.219	.118			
14	.160	.122	.171	.143	.097			
15	.071	.064	.097	.083	.049			
16	.087	.110	.143	.105				
17	.033	.048	.056	.103				
18	-.031	.040	.095	.065				
19	.024	.056	.083	.074				
c_{in}	0.607	0.646	0.650	0.620	0.511			
c_{in}	.0095	-.0043	-.0246	-.0240	-.0272			
C_{in}^{I}	= 0.600					$x^{\text{I}}_{\text{cp}} = 26.1$		
$C_{\text{in}}^{\text{II}}$	= -.0066					$y^{\text{II}}_{\text{cp}} = 42.0$		
$C_{\text{in}}^{\text{III}}$	= .252							

Orifice	Row					c_n	c_m	$c_n^N = 0.531$	$c_m^N = .0094$	$x^N_{cp} = 23.2$	$y^N_{cp} = 42.2$
	1	2	3	4	5						
1	2.341	1.817	1.667	1.533	1.136						
2	2.041	1.802	1.393	1.406	1.129						
3	1.694	1.650	1.443	1.391	0.937						
4	1.605	1.641	1.337	1.340	0.761						
5	1.056	1.348	1.151	1.181	0.699						
6	0.844	1.104	1.077	0.976	0.542						
7	0.679	0.837	0.973	0.857	0.471						
8	0.614	0.686	0.900	0.886	0.189						
9	0.466	0.542	0.662	0.674	0.116						
10	0.344	0.408	0.484	0.523	0.008						
11	0.248	0.258	0.358	0.424	0.084						
12	0.209	0.234	0.149	0.238	0.059						
13	0.156	0.042	0.108	0.134	0.089						
14	0.124	0.084	0.092	0.016	0.042						
15	0.033	0.008	0.050	0.017	0.068						
16	0.066	0.057	0.082	0.033							
17	0.009	0.058	0.050	0.066							
18	-0.008	0.008	0.049	0.051							
19	-0.024	0.041	0.043	0.034							

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TABLE IV.- Continued.

 $[M \approx 0.7]$
 $(L) M = 0.73$
 $C_{NA} = 0.56$
 $\alpha = 10.8^\circ$
 $\delta_{a_L} = 0^\circ$
 $(L) M = 0.73$
 $C_{NA} = 0.65$
 $\alpha = 12.2^\circ$
 $\delta_{a_L} = 0.1^\circ$ down

Orifice	Row				
	1	2	3	4	5
1	1.771	1.532	1.660	1.398	1.071
2	1.700	1.540	1.455	1.308	1.086
3	1.540	1.385	1.415	1.304	0.882
4	1.604	1.448	1.336	1.192	0.732
5	1.293	1.263	1.137	1.115	0.658
6	1.113	1.219	1.056	0.940	0.663
7	1.046	0.994	0.999	0.898	0.584
8	0.882	0.948	0.990	0.886	0.383
9	0.806	0.849	0.582	0.776	0.322
10	0.648	0.770	0.508	0.703	0.151
11	0.481	0.573	0.681	0.621	0.281
12	0.383	0.454	0.371	0.476	0.264
13	0.191	0.232	0.315	0.327	0.232
14	0.212	0.255	0.242	0.235	0.222
15	0.148	0.189	0.246	0.211	0.122
16	0.188	0.200	0.251	0.206	0.16
17	0.131	0.173	0.158	0.227	0.17
18	0.099	0.143	0.180	0.144	0.18
19	0.008	0.008	0.098	0.129	0.19

Orifice	Row				
	1	2	3	4	5
1	1.723	1.467	1.498	1.380	1.115
2	1.619	1.461	1.362	1.311	1.047
3	1.461	1.347	1.266	1.227	.874
4	1.521	1.368	1.204	1.204	.749
5	1.286	1.204	1.089	1.097	.643
6	1.136	1.180	1.038	1.031	.649
7	1.049	0.955	0.949	0.859	.578
8	0.915	0.982	0.982	0.909	.463
9	0.824	0.875	0.875	0.731	.370
10	0.619	0.804	0.804	0.673	.222
11	0.564	0.604	0.691	0.647	.314
12	0.461	0.566	0.660	0.508	.289
13	0.319	0.337	0.435	0.407	.272
14	0.323	0.336	0.375	0.282	.254
15	0.257	0.323	0.318	0.293	.154
16	0.251	0.301	0.346	0.262	
17	0.197	0.276	0.269	0.314	
18	0.145	0.207	0.250	0.185	
19	0.008	0.000	0.107	0.194	

c_h	0.679	0.708	0.656	0.645	0.551
c_m	-0.0246	-0.0418	-0.0459	-0.0505	-0.0556
c_n	0.641	$x'_{ep} = 20.6$	$y'_{ep} = 41.4$		
c_a	-0.0359				
c_b	.265				
c_m'	0.665	$x'_{ep} = 33.1$	$y'_{ep} = 41.3$		
c_n'	-0.0536				
c_b'	.274				

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TABLE IV.-- Concluded.
 $[M \approx 0.71]$

(m) $M = 0.72$
 $C_{MA} = 0.66$ $\alpha = 15.5^\circ$
 $\delta_{aL} = 1.0^\circ$ down

Orifice	Row				
	1	2	3	4	5
1	1.440	1.286	1.297	1.231	1.130
2	1.349	1.260	1.141	1.180	1.041
3	1.218	1.197	1.079	1.083	0.865
4	1.233	1.164	0.978	1.115	0.681
5	1.063	1.020	0.887	0.978	0.596
6	0.911	0.951	0.835	0.808	0.587
7	0.896	0.820	0.814	0.766	0.561
8	0.761	0.814	0.809	0.804	0.413
9	0.752	0.734	0.713	0.628	0.375
10	0.642	0.742	0.675	0.618	0.314
11	0.564	0.560	0.612	0.574	0.367
12	0.451	0.517	0.450	0.499	0.358
13	0.294	0.374	0.392	0.405	0.323
14	0.399	0.373	0.402	0.413	0.346
15	0.300	0.375	0.379	0.306	0.231
16	0.397	0.415	0.422	0.346	
17	0.341	0.335	0.328	0.374	
18	0.248	0.332	0.333	0.310	
19	0.016	0.024	0.058	0.221	
c_A	0.652	0.673	0.635	0.629	0.572
c_B	-0.0654	-0.0783	-0.0850	-0.0757	-0.0729
C_N'	0.621				
C_M'	= -0.0700				
C_D'	= .260				
			$x'_{cp} = .36.3$	$y'_{cp} = .41.9$	

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TABLE V
PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE DOUGLAS X-3 WING

 $[M \approx 0.77]$

(a) $M = 0.77$
 $c_{Na} = 0$
 $\alpha = 2.2^\circ$
 $\delta_{aL} = 0.8^\circ$ up

Orifice	Row				
	1	2	3	4	5
1	0.265	0.283	0.571	0.669	0.196
2	•202	•241	•181	•310	•239
3	•175	•132	•285	•088	3
4	•149	•221	•099	•234	•008
5	•109	•055	•054	•172	5
6	•065	•122	•129	-	•022
7	•043	•066	•044	-	•033
8	•065	•067	•216	•156	-
9	•061	•034	•059	•008	-
10	•032	•092	•058	•067	-
11	•009	•032	•067	-	•017
12	•032	•051	-	•042	-
13	•007	•025	-	•008	-
14	•092	-	•076	-	•084
15	-	•049	-	•008	-
16	•050	•000	-	•000	-
17	•009	•067	•017	-	•025
18	-	•048	•008	•025	-
19	•025	•025	•025	-	•104

(b) $M = 0.77$
 $c_{Na} = 0.04$
 $\alpha = 2.4^\circ$
 $\delta_{aL} = 0.8^\circ$ up

Orifice	Row				
	1	2	3	4	5
1	0.416	0.613	0.927	1.002	0.422
2	•313	•315	•371	•539	•291
3	•207	•250	•197	•348	•142
4	•217	•296	•163	•277	•049
5	•140	•142	•117	•213	•025
6	•108	•155	•160	•011	•081
7	•097	•142	•077	•109	-
8	•086	•100	•268	•200	-
9	•104	•050	•101	•017	-
10	•032	•108	•074	•100	-
11	•034	•023	•100	-	•084
12	•040	•050	-	•008	-
13	•030	•042	-	•000	-
14	•091	•067	•039	-	•081
15	-	•033	-	•033	-
16	•033	•000	•008	-	•148
17	•009	•033	•017	-	•008
18	-	•024	•008	•016	-
19	•016	•058	•086	•042	-

(c) $M = 0.77$
 $c_{Na} = 0.090$
 $x'_{cp} = 15.0$
 $y'_{cp} = 35.5$

Orifice	Row				
	1	2	3	4	5
c_n	0.057	0.078	0.081	0.052	0.000
c_m	•0000	-•0028	.0006	.0193	.0202
c_b	0.059	•0059	•021	•025	•035

(d) $M = 0.77$
 $c_{Na} = 0.094$
 $x'_{cp} = 14.6$
 $y'_{cp} = 38.2$

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TABLE V.- Continued.

 $[M \approx 0.77]$

(c) $M = 0.77$
 $C_{NA} = 0.11$
 $\alpha = 3.5^\circ$
 $\delta_{aL} = 0.8^\circ$ up

Orifice	Row				
	1	2	3	4	5
1	0.731	1.221	1.325	1.268	0.873
2	•534	•779	•963	1.128	•772
3	•390	•368	•534	•900	•250
4	•386	•382	•304	•574	•081
5	•301	•249	•170	•371	•041
6	•226	•242	•255	•108	•105
7	•247	•217	•174	•227	•042
8	•172	•143	•331	•254	•000
9	•198	•108	•167	•091	•058
10	•096	•141	•090	•124	•232
11	•094	•086	•116	•034	•092
12	•064	•058	•017	•033	•008
13	•037	•067	•017	•092	•065
14	•099	•075	•054	—	•139
15	—	•033	—	•008	—
16	•025	—	•016	—	•050
17	•000	•058	•000	•041	•000
18	—	•032	•008	•034	•017
19	•016	•016	•086	•008	•032

(d) $M = 0.77$
 $C_{NA} = 0.14$
 $\alpha = 3.8^\circ$
 $\delta_{aL} = 0.8^\circ$ up

Orifice	Row				
	1	2	3	4	5
1	0.927	1.439	1.543	1.366	1.014
2	•645	1.072	1.176	1.260	•890
3	•498	•563	•708	1.051	•380
4	•477	•436	•401	•817	•097
5	•387	•282	•255	•541	•075
6	•237	•319	•319	•130	•089
7	•269	•228	•196	•184	•059
8	•210	•353	•232	—	•016
9	•224	•125	•167	•100	•033
10	•120	•120	•141	•132	—
11	•094	•117	•166	•051	—
12	•088	•092	•000	•033	—
13	•13	•044	•033	•041	—
14	•14	•099	•075	•038	—
15	—	•008	—	•016	—
16	•16	•041	—	•024	•008
17	•17	•000	•049	•017	—
18	—	•032	•017	•008	—
19	•19	•032	•033	•077	•000

(e) $M' = 0.160$
 $C_{m'} = .0033$
 $C_{aL}' = .0075$
 $\alpha' = 15.8$
 $\delta_{aL}' = .0073$
 $C_{NA}' = 0.148$
 $C_b' = .066$
 $y'_{cp} = 40.9$

Orifice	Row				
	1	2	3	4	5
c _m	0.155	0.177	0.191	0.168	0.099
c _m	.0033	.0075	.0073	.0318	.0293
c _{m'}	0.160	—	x' _{cp} = 15.8	—	—
c _{aL'}	—	—	y' _{cp} = 40.9	—	—
c _{NA'}	0.148	—	—	—	—
c _{b'}	.066	—	—	—	—

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TABLE V.- Continued.

 $[M \approx 0.77]$

(e) $M = 0.77$ $\alpha = 4.9^\circ$ up
 $C_{NA} = 0.21$ $\delta_{aL} = 0.8^\circ$ up

(f) $M = 0.77$ $\alpha = 5.5^\circ$
 $C_{NA} = 0.25$ $\delta_{aL} = 0.6^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.375	1.706	1.920	1.593	1.188	1	1.625	1.907	2.055	1.753	1.384
2	.917	1.504	1.490	1.118	1.118	2	1.090	1.655	1.592	1.664	1.230
3	.666	.935	1.093	1.323	.691	3	.806	1.262	1.282	1.476	.788
4	.665	.682	.592	1.173	.208	4	.790	.898	.946	1.266	.261
5	.491	.377	.401	.864	.074	5	.590	.457	.500	.957	.171
6	.396	.404	.401	.343	.128	6	.444	.442	.490	.456	.142
7	.320	.323	.335	.258	.067	7	.390	.382	.331	.392	.082
8	.352	.263	.382	.340	.000	8	.337	.281	.440	.346	.008
9	.256	.198	.224	.124	-.049	9	.304	.220	.262	.154	-.032
10	.143	.190	.163	.148	-.255	10	.172	.204	.185	.170	-.211
11	.119	.093	.173	.059	-.083	11	.167	.130	.211	.083	-.025
12	.080	.108	.025	.032	-.000	12	.086	.114	.008	.048	.000
13	.044	.058	.025	-.075	-.056	13	.051	.041	.049	-.049	-.040
14	.106	.100	.053	-.053	-.155	14	.097	.098	.038	-.137	-.008
15	.000	.000	-.017	-.135	-.042	15	-.016	.000	-.000	-.117	.000
16	.041	.008	.016	-.066	-.066	16	.048	-.008	-.016	-.065	-.040
17	.008	.049	-.008	-.065	-.065	17	.000	.064	.016	-.033	-.033
18	-.048	.000	.024	-.033	-.000	18	-.039	.008	.016	-.016	-.017
19	.032	.049	.068	.000	-.024	19	.024	.040	.075	.017	
c_n	0.258	0.289	0.288	0.272	0.196	c_n	0.295	0.329	0.343	0.315	0.249
c_m	.0101	.0146	.0149	.0440	.0383	c_m	.0130	.0193	.0208	.0148	.0357
c_b'	$C_N' = 0.262$	$x'_{cp} = 16.0$				$C_N' = 0.304$	$x'_{cp} = 16.3$				
	$C_m' = .0236$	$y'_{cp} = 41.4$				$C_m' = .0266$					
	$C_b' = .108$					$C_b' = .128$					

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TABLE V.- Continued.

 $[M \approx 0.77]$

(g) $M = 0.77$
 $c_{NA} = 0.31$ $\alpha = 6.2^\circ$
 $c_{NA} = 0.6^\circ$ up
 $\delta_{aL} = 0.6^\circ$ up

(h) $M = 0.78$
 $c_{NA} = 0.34$ $\alpha = 6.6^\circ$
 $\delta_{aL} = 0.6^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.914	2.047	2.064	1.923	1.474	1	2.078	2.212	2.069	1.918	1.532
2	1.391	1.846	1.791	1.805	1.382	2	1.538	1.915	1.830	1.853	1.451
3	1.070	1.500	1.542	1.681	.969	3	1.235	1.601	1.580	1.718	1.040
4	1.001	1.311	1.334	1.466	.391	4	1.108	1.392	1.446	1.559	.476
5	646	704	711	1.193	.257	5	.727	.786	.894	1.231	.321
6	585	523	.649	.639	.188	6	.594	.596	.791	.742	.218
7	458	462	.444	.514	.114	7	.509	.493	.590	.585	.138
8	427	321	.497	.482	.016	8	.478	.384	.568	.566	.040
9	350	.250	.308	.209	.000	9	.391	.281	.331	.257	-.008
10	193	.250	.238	.209	-.193	10	.208	.265	.245	.216	-.201
11	182	.189	.209	.090	-.024	11	.190	.166	.225	.090	.008
12	124	.137	.040	.024	.008	12	.147	.137	.016	.039	.016
13	.079	.073	.024	-.049	-.047	13	.086	.065	.032	-.065	-.024
14	.120	.081	.030	-.175	-.000	14	.127	.081	.045	-.158	-.016
15	-.008	.000	-.008	-.115	.000	15	-.016	.008	-.008	-.107	-.025
16	.040	.008	.016	-.064	-.000	16	.032	.023	.000	-.064	-.025
17	.000	.056	.008	-.024	-.000	17	.008	.032	.000	-.040	-.025
18	-.046	.024	.024	-.057	-.008	18	-.046	-.008	.024	-.041	-.025
19	.024	.040	.040	.108	.008	19	.039	.048	.074	.000	-.000
c_n	0.360	0.402	0.420	0.377	0.307	c_n	0.393	0.431	0.454	0.407	0.340
c_m	.0162	.0223	.0226	.0514	.0350	c_m	.0179	.0256	.0254	.0506	.0355

$c_N' = 0.370$ $x'_{cp} = 16.8$
 $c_m' = .0305$ $y'_{cp} = 41.9$
 $c_b' = .155$ $c_N' = 0.400$
 $c_m' = .0324$
 $c_b' = .168$ $x'_{cp} = 16.9$
 $y'_{cp} = 42.0$

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TABLE V.-- Continued.

 $[M \approx 0.77]$

(1) $M = 0.78$
 $c_{N_A} = 0.42$
 $\alpha_a = 7.6^\circ$
 $\alpha_{a_L} = 0.4^\circ$ up

(j) $M = 0.78$
 $c_{N_A} = 0.46$
 $\alpha = 8.2^\circ$
 $\alpha_{a_L} = 0.6^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	2.358	2.128	1.835	1.988	1.415	1	2.429	1.946	1.822	1.672	1.299
2	1.814	2.027	1.697	1.903	1.314	2	1.834	1.962	1.674	1.595	1.210
3	1.536	1.787	1.578	1.736	1.143	3	1.586	1.774	1.502	1.515	1.079
4	1.435	1.653	1.486	1.642	.748	4	1.488	1.735	1.484	1.469	.762
5	1.954	1.235	1.190	1.393	.577	5	1.087	1.338	1.199	1.299	.640
6	1.739	.945	1.098	.970	.436	6	.842	1.072	1.137	.969	.545
7	.632	.764	.894	.814	.243	7	.715	.920	.935	.865	.380
8	.570	.469	.846	.789	.055	8	.683	.606	.906	.894	.150
9	.482	.385	.548	.440	.008	9	.531	.505	.628	.608	.071
10	.262	.305	.356	.359	-.184	10	.331	.417	.442	.503	-.168
11	.206	.188	.312	.196	-.016	11	.247	.270	.408	.350	.024
12	.147	.153	.024	.087	.016	12	.224	.193	.088	.213	.081
13	.093	.040	.024	-.016	.000	13	.100	.057	.080	.024	.016
14	.127	.097	.022	-.158	.008	14	.135	.089	.067	-.087	.056
15	.031	-.016	.000	-.099	.008	15	.031	.016	.064	-.074	-.008
16	.040	.031	.016	-.064	.000	16	.079	.047	.055	.000	
17	.000	.024	-.016	-.024	.000	17	.008	.024	.024	-.008	
18	-.038	-.008	.039	-.057	.000	18	-	.031	.024	.039	.024
19	.016	.040	.009	.049	.000	19	.031	.032	.107	.016	
c_A	0.477	0.520	0.537	0.504	0.414	c_A	0.532	0.578	0.582	0.542	0.452
c_M	.0221	.0280	.0164	.0432	.0260	c_M	.0158	.0182	.0035	.0150	.0083
						c_N'	0.532				
						c_m'	.0179				
						c_b'	.223				
						x'_{cp}	18.7				
						y'_{cp}	42.2				

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TABLE V.- Continued.
 $[M \approx 0.77]$

(k) $M = 0.78$
 $C_{NA} = 0.50$
 $\alpha = 8.9^\circ$
 $\delta_{aL} = 0.6^\circ$ up

(l) $M = 0.78$
 $C_{NA} = 0.58$
 $\alpha = 10.4^\circ$
 $\delta_{aL} = 0.2^\circ$ up

Orifice	Row					Row				
	1	2	3	4	5	1	2	3	4	5
1	2.316	1.760	1.691	1.594	1.233	1	1.950	1.681	1.521	1.254
2	1.934	1.727	1.518	1.547	1.133	2	1.796	1.633	1.495	1.185
3	1.633	1.612	1.456	1.427	1.023	3	1.685	1.529	1.456	1.395
4	1.625	1.667	1.396	1.401	0.737	4	1.679	1.551	1.427	1.369
5	1.197	1.385	1.195	1.275	0.662	5	1.321	1.323	1.134	1.213
6	0.954	1.163	1.144	0.956	0.605	6	1.057	1.237	1.134	0.966
7	0.846	1.021	0.984	0.894	0.459	7	0.991	1.083	0.963	0.904
8	0.754	0.721	0.965	0.902	0.236	8	0.836	0.859	1.057	0.923
9	0.612	0.631	0.747	0.685	0.150	9	0.786	0.775	0.811	0.733
10	0.368	0.543	0.582	0.604	-	10	0.575	0.671	0.755	0.716
11	0.312	0.367	0.486	0.455	0.097	11	0.435	0.532	0.670	0.568
12	0.200	0.248	0.191	0.330	0.105	12	0.324	0.360	0.334	0.432
13	0.128	0.080	0.143	0.168	0.055	13	0.178	0.233	0.293	0.272
14	0.174	0.096	0.103	-	0.031	14	0.198	0.169	0.192	0.134
15	0.031	0.040	0.088	0.008	0.041	15	0.078	0.150	0.200	0.139
16	0.094	0.077	0.103	-	0.056	16	0.142	0.124	0.174	0.159
17	0.008	0.047	0.056	0.087	0.017	17	0.066	0.142	0.127	0.189
18	-	0.015	0.040	0.086	0.040	18	0.008	0.096	0.149	0.129
19	0.031	0.016	0.115	0.073	0.019	19	0.031	0.008	0.115	0.122
c_n	0.580	0.615	0.623	0.586	0.482	c_n	0.653	0.681	0.702	0.649
c_m	.0127	.0037	-.0162	-.0060	-.0095	c_m	-.0087	-.0223	-.0436	-.0353
	$c_n' = 0.571$	$x'_{op} = 24.4$					$c_n' = 0.637$	$x'_{op} = 28.5$		
	$c_m' = .0033$	$y'_{op} = 41.9$					$c_m' = -.0221$	$y'_{op} = 42.0$		
	$c_b' = .239$						$c_b' = .267$			

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TABLE V.- Concluded.

 $[M \approx 0.77]$

$$(m) \quad M = 0.78 \quad \alpha = 11.9^\circ \\ C_{NA} = 0.61 \quad \delta_{AL} = 0^\circ$$

Orifice	Row				
	1	2	3	4	5
1	1.0778	1.0548	1.0583	1.0434	1.0189
2	1.0674	1.0484	1.0407	1.0428	1.0120
3	1.0494	1.0370	1.0327	1.0309	0.979
4	1.0566	1.0370	1.0268	1.0313	0.758
5	1.0328	1.0226	1.0121	1.0180	0.700
6	1.0096	1.0171	1.0049	0.943	0.673
7	1.0019	1.0070	0.982	0.912	0.586
8	0.906	0.910	1.0004	0.932	0.456
9	0.842	0.836	0.833	0.779	0.371
10	0.612	0.789	0.777	0.769	0.135
11	0.508	0.657	0.692	0.664	0.290
12	0.430	0.503	0.397	0.540	0.305
13	0.284	0.297	0.364	0.360	0.233
14	0.276	0.296	0.324	0.259	0.255
15	0.218	0.276	0.295	0.220	0.155
16	0.267	0.247	0.299	0.262	
17	0.197	0.260	0.253	0.283	
18	0.168	0.184	0.266	0.177	
19	0.016	0.024	0.131	0.178	
C_A	0.703	0.723	0.716	0.690	0.591
C_B	-0.0387	-0.0550	-0.0684	-0.0594	-0.0591
C_N'	0.673			$x'_{cp} = 32.4$	
C_m'	-0.0495			$y'_{cp} = 41.9$	
C_D'	.282				

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TABLE VI
PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE DOUGLAS X-3 WING

$[M \approx 0.83]$

(a) $M = 0.82$
 $c_{NA} = 0.02$
 $\alpha = 2.3^\circ$
 $c_{aL} = 0.1$ up

(b) $M = 0.83$
 $c_{NA} = 0.05$
 $\alpha = 2.4^\circ$
 $c_{aL} = 0.3$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.344	0.354	0.695	0.791	0.301	1	0.397	0.487	0.887	0.923	0.430
2	.221	.302	.242	.424	.242	2	.286	.326	.358	.554	.276
3	.166	.234	.147	.303	.118	3	.259	.230	.184	.327	.106
4	.164	.236	.156	.289	.015	4	.181	.242	.135	.304	-.007
5	.077	.059	.096	.153	.015	5	.086	.106	.094	.216	.052
6	.107	.109	.125	.010	.065	6	.124	.146	.141	.029	.043
7	.058	.088	.049	.049	.015	7	.095	.096	.106	.077	.037
8	.077	.089	.231	.199	-.037	8	.095	.117	.237	.196	-.058
9	.070	.067	.083	.045	-.052	9	.076	.074	.096	.037	-.037
10	.043	.112	.074	.060	-.112	10	.071	.103	.065	.073	-.206
11	.015	.035	.090	.038	-.045	11	.030	.028	.081	.037	-.037
12	.029	.068	.000	.015	-.008	12	.043	.059	.000	-.036	-.052
13	.013	.045	.015	-.090	-.044	13	.020	.015	.022	-.067	-.036
14	.089	.068	.041	-.022	-.022	14	.109	.089	.054	-.080	-.044
15	-.044	-.037	.000	-.107	-.008	15	-.050	-.036	-.007	-.083	-.008
16	.007	.000	.000	-.015	-.008	16	.015	.014	-.007	-.037	-.037
17	-.023	.052	.037	-.044	-.007	17	-.038	.036	.015	-.007	-.007
18	-.050	.000	.007	-.015	-.008	18	-.035	.000	.000	-.037	-.037
19	.022	.037	.054	-.008	-.007	19	.007	.022	.061	.007	-.007
c_n	0.063	0.089	0.101	0.085	0.027	c_n	0.079	0.101	0.110	0.090	0.035
c_m	.0025	-.0022	.0006	.0142	.0141	c_m	.0004	-.0009	.0032	.0208	.0174
c_b'	$c_N' = 0.078$ $c_m' = .0043$ $c_b' = .031$		$x'_c p = 19.4$ $y'_c p = 40.3$			$c_N' = 0.087$ $c_m' = .0068$ $c_b' = .035$		$x'_c p = 17.2$ $y'_c p = 39.7$			

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TABLE VI.--Continued.
 $[M \approx 0.83]$

(c) $M = 0.83$ $\alpha = 3.1^\circ$
 $c_{NA} = 0.09$ $\delta_{AL} = 0.7^\circ$ up

(d) $M = 0.83$ $\alpha = 3.8^\circ$
 $c_{NA} = 0.16$ $\delta_{AL} = 0.8^\circ$ up

Orifice	Row					Row					
	1	2	3	4	5						
1	0.623	0.947	1.194	1.315	0.597	1	1.045	1.452	1.704	1.747	1.146
2	0.430	0.466	0.709	0.482	0.377	2	0.601	0.641	0.820	1.336	0.645
3	0.343	0.362	0.355	0.448	0.191	3	0.490	0.471	0.465	0.793	0.180
4	0.309	0.345	0.276	0.437	0.050	4	0.455	0.466	0.378	0.452	0.091
5	0.208	0.200	0.168	0.299	0.095	5	0.309	0.302	0.250	0.370	0.101
6	0.209	0.194	0.234	0.133	0.092	6	0.319	0.307	0.333	0.217	0.098
7	0.161	0.191	0.163	0.133	0.052	7	0.262	0.283	0.275	0.188	0.051
8	0.170	0.165	0.310	0.252	-	8	0.253	0.240	0.400	0.308	-
9	0.129	0.124	0.162	0.066	-	9	0.188	0.181	0.204	0.130	-
10	0.091	0.139	0.086	0.109	-	10	0.118	0.174	0.121	0.101	-
11	0.053	0.041	0.102	0.015	-	11	0.089	0.075	0.123	0.052	-
12	0.078	0.088	0.015	0.007	-	12	0.084	0.094	0.029	0.000	-
13	0.039	0.037	-	0.015	-	13	0.039	0.022	0.000	-	0.022
14	0.101	0.073	-	0.047	-	14	0.093	0.073	0.060	-	0.064
15	-	0.043	-	0.036	-	15	-	0.028	-	0.029	-
16	-	0.007	-	0.007	-	16	-	0.007	-	0.000	-
17	-	0.045	-	0.029	-	17	-	0.022	-	0.043	-
18	-	0.035	-	0.007	-	18	-	0.056	-	0.000	-
19	-	0.014	-	0.029	-	19	-	0.021	-	0.014	-
c_n	0.128	0.151	0.168	0.123	0.058	c_n	0.185	0.210	0.226	0.191	0.100
c_m	.0025	.0026	.0071	.0286	.0263	c_m	.0080	.0077	.0101	.0392	.0350

$C_N' = 0.130$ $x'_{cp} = 15.6$
 $C_m' = .0122$ $y'_{cp} = 39.0$
 $C_b' = .051$

$x'_{cp} = 15.0$
 $y'_{cp} = 40.1$

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TABLE VI.- Continued.
 $[M \approx 0.83]$

(e) $M = 0.83$
 $c_{N_A} = 0.22$
 $\alpha = 4.5^\circ$
 $\delta_{a_L} = 0.8^\circ$ up

(f) $M = 0.83$
 $c_{N_A} = 0.26$
 $\alpha = 5.2^\circ$
 $\delta_{a_L} = 0.8^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.345	1.717	1.906	1.920	1.507	1	1.543	1.846	2.003	1.999	1.581
2	.850	1.532	1.469	1.617	1.359	2	1.068	1.643	1.585	1.738	1.462
3	.667	1.742	1.296	1.477	.387	3	.873	1.318	1.439	1.552	.895
4	.621	.521	.659	1.160	.049	4	.788	.833	1.236	1.421	.028
5	.466	.377	.314	.544	.065	5	.562	.474	1.192	.000	
6	.393	.392	.369	.253	.133	6	.490	.453	.465	.371	.097
7	.354	.386	.322	.216	.058	7	.424	.483	.336	.250	.072
8	.326	.297	.427	.288	.014	8	.424	.303	.421	.294	.014
9	.247	.224	.239	.122	-.079	9	.273	.228	.215	.092	-.071
10	.173	.202	.121	.144	-.360	10	.192	.192	.154	.128	-.370
11	.096	.108	.130	.051	-.088	11	.117	.107	.135	.058	-.058
12	.097	.123	.050	.028	-.007	12	.131	.107	.021	.014	-.036
13	.045	.036	.022	-.072	-.042	13	.038	.065	.028	-.050	-.014
14	.107	.073	.067	-.192	-.000	14	.134	.079	.059	.232	-.036
15	-.042	-.029	-.036	-.133	-.022	15	-.042	-.028	-.043	-.124	.022
16	.000	-.007	.014	-.058	-.000	16	.007	-.028	-.000	-.064	
17	-.030	-.043	.000	-.036	-.000	17	-.037	.056	.007	.000	
18	-.048	.022	.000	-.022	-.000	18	-.027	.014	.007	-.029	
19	.000	.014	.067	.007	-.000	19	.000	.035	.059	.022	
c_n	0.246	0.283	0.287	0.263	0.172	c_n	0.301	0.323	0.353	0.310	0.237
c_m	.0109	.0136	.0159	.0471	.0426	c_m	.0115	.0203	.0256	.0555	.0462
c_b											
	$c_{N'} = 0.253$		$x'_{cp} = 15.3$				$c_{N'} = 0.302$		$x'_{cp} = 14.9$		
	$c_m' = .0246$		$y'_{cp} = 41.1$				$c_m' = .0307$		$y'_{cp} = 41.8$		
	$c_b' = .104$						$c_b' = .126$				

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TABLE VI.- Continued.

 $[M \approx 0.83]$

(g) $M = 0.84$
 $C_{NA} = 0.31$
 $\alpha = 5.7^\circ$
 $Q_{BL} = 0.6^\circ$ up

(h) $M = 0.84$
 $C_{NA} = 0.35$
 $\alpha = 6.2^\circ$
 $Q_{BL} = 0.4^\circ$ up

Orifice	Row					Row					
	1	2	3	4	5						
1	1.708	1.919	2.060	2.074	1.689	1.807	1.983	2.109	2.149	2.187	
2	1.205	1.704	1.669	1.808	1.525	2	1.340	1.748	1.752	1.842	1.579
3	1.026	1.494	1.522	1.651	1.214	3	1.105	1.612	1.559	1.732	1.264
4	.922	1.367	1.367	1.505	.266	4	1.025	1.424	1.442	1.561	.547
5	.691	.633	.972	1.321	.028	5	.791	.825	1.120	1.376	.271
6	.612	.522	.747	.915	.055	6	.704	.645	1.120	1.031	.081
7	.509	.496	.507	.513	.035	7	.611	.617	.921	1.013	.014
8	.482	.532	.452	.355	.014	8	.584	.646	.786	.628	.000
9	.379	.204	.198	.070	-.035	9	.526	.334	.196	.194	-.041
10	.176	.197	.139	.077	-.288	10	.174	.188	.110	.083	-.215
11	.123	.119	.140	.029	-.043	11	.129	.104	.118	-.007	.000
12	.081	.106	.021	.014	-.007	12	.101	.105	.007	-.034	-.007
13	.056	.064	.021	-.078	-.007	13	.050	.042	.014	-.070	-.007
14	.111	.064	.045	-.146	-.007	14	.096	.070	.058	-.213	.000
15	-.014	-.025	-.028	-.144	-.014	15	-.034	-.014	-.042	-.114	.014
16	-.007	-.007	-.007	-.028	-.014	16	-.027	-.000	-.014	-.028	
17	-.036	.056	.000	-.049	-.007	17	-.043	-.034	-.021	-.021	
18	-.041	.000	-.007	-.007	-.014	18	-.027	-.021	-.021	-.035	
19	.000	.035	.058	-.014	-.014	19	-.014	-.041	-.079	.021	

Orifice	Row					Row
	1	2	3	4	5	
1	1.807	1.983	2.109	2.149	2.187	
2	1.340	1.748	1.752	1.842	1.579	
3	1.105	1.612	1.559	1.732	1.264	
4	1.025	1.424	1.442	1.561	.547	
5	.791	.825	1.120	1.376	.271	

 $x'_{cp} = 15.2$
 $y'_{cp} = 42.1$
 $C_N' = 0.407$
 $C_m' = 0.377$
 $C_b' = .173$
 $x'_{cp} = 15.8$
 $y'_{cp} = 42.4$

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TABLE VI.-- Continued.

 $[M \approx 0.83]$

(1) $M = 0.84$
 $C_{NA} = 0.42$
 $\alpha = 6.9^\circ$
 $\delta_{aL} = 0.5^\circ$ up

(J) $M = 0.84$
 $C_{NA} = 0.46$
 $\alpha = 7.4^\circ$
 $\delta_{aL} = 0.4^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.931	2.073	2.194	2.243	1.765	1	2.048	2.140	2.255	2.286	1.837
2	1.451	1.844	1.806	1.921	1.675	2	1.508	1.924	1.871	1.975	1.720
3	1.259	1.664	1.639	1.792	1.355	3	1.343	1.763	1.712	1.837	1.420
4	1.160	1.541	1.549	1.643	.805	4	1.220	1.579	1.596	1.735	.887
5	.893	1.045	1.245	1.455	.531	5	.977	1.246	1.301	1.518	.590
6	.825	.796	1.219	1.114	.262	6	.874	.910	1.266	1.153	.380
7	.741	.730	1.105	1.105	.111	7	.826	.825	1.199	1.171	.201
8	.714	.724	1.092	.936	-.020	8	.773	.776	1.237	.895	.020
9	.694	.774	.382	.414	-.034	9	.776	.804	.539	.494	-.048
10	.225	.186	.150	.309	-.269	10	.297	.227	.237	.404	-.281
11	.135	.078	.097	.084	-.007	11	.134	.103	.103	.217	-.028
12	.113	.111	-.048	-.041	-.007	12	.119	.083	-.041	.014	-.014
13	.037	.021	-.021	-.125	-.007	13	.018	.007	-.041	-.097	-.000
14	.096	.062	-.013	-.266	-.000	14	.088	.048	.000	.278	.000
15	-	.027	-.027	-.021	-.156	15	-	.040	-.041	-.062	-.183
16	-	.014	-.007	-.020	-.076	16	-	.014	-.013	-.007	-.089
17	-	.043	-.034	-.007	-.041	17	-	.014	.034	-.000	-.054
18	-	.046	-.000	-.027	-.035	18	-	.059	-.000	-.007	-.049
19	-	.013	-.048	-.078	-.007	19	.007	.041	.071	.007	
c_n	0.444	0.497	0.528	0.504	0.424	c_n	0.479	0.531	0.579	0.539	0.469
c_m	.0205	.0285	.0389	.0606	.0475	c_m	.0211	.0318	.0352	.0575	.0449

$C_N' = 0.473$	$x'_{cp} = 17.0$	$x'_{cp} = 17.6$
$C_m' = .0380$	$y'_{cp} = 42.9$	$y'_{cp} = 43.1$
$C_b' = .203$		

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TABLE VI.- Continued.

 $[M \approx 0.85]$

(k) $M = 0.85$
 $C_{NA} = 0.52$
 $\alpha = 8.2^\circ$
 $\delta_{BL} = 0.6^\circ$ up

Orifice	Row				
	1	2	3	4	5
1	2.203	2.236	2.364	2.350	1.902
2	1.577	2.043	1.995	2.023	1.750
3	1.499	1.865	1.806	1.885	1.406
4	1.319	1.717	1.716	1.739	0.758
5	1.098	1.439	1.393	1.487	0.616
6	1.005	1.061	1.376	1.078	0.492
7	0.903	0.938	1.267	0.963	0.373
8	0.894	0.891	1.330	0.901	0.169
9	0.887	0.808	0.565	0.663	0.095
10	0.309	0.267	0.412	0.614	-
11	0.141	0.154	0.328	0.453	0.042
12	0.126	0.117	0.068	0.276	0.069
13	0.043	0.048	0.027	0.110	0.060
14	0.115	0.055	0.013	-	0.182
15	-	0.020	-	0.014	-
16	-	0.034	0.000	0.020	-
17	-	0.028	0.041	0.007	-
18	-	0.039	0.014	0.027	0.000
19	0.013	0.020	0.092	0.028	

(l) $M = 0.85$
 $C_{NA} = 0.56$
 $\alpha = 10.1^\circ$
 $\delta_{BL} = 1.0^\circ$ up

Orifice	Row				
	1	2	3	4	5
1	2.051	1.589	1.900	1.219	1.027
2	1.863	1.564	1.720	1.133	0.924
3	1.644	1.546	1.628	1.068	0.740
4	1.602	1.469	1.620	1.034	0.543
5	1.252	1.335	0.794	0.958	0.484
6	1.027	1.184	0.794	0.683	0.444
7	0.917	1.041	0.689	0.683	0.461
8	0.838	0.815	0.763	0.680	0.330
9	0.643	0.730	0.645	0.572	0.311
10	0.511	0.600	0.632	-	0.095
11	0.428	0.435	0.613	0.520	-
12	0.395	0.395	0.360	0.396	0.028
13	0.213	0.179	0.339	0.322	0.400
14	0.203	0.185	0.309	0.027	0.395
15	0.107	0.155	0.294	-	0.091
16	0.128	0.199	0.230	0.238	
17	0.084	0.196	0.305	0.283	
18	0.013	0.116	0.288	0.255	
19	0.033	-	0.007	0.197	0.180

$C_N^I = 0.583$
 $C_m^I = 0.256$
 $C_b^I = .254$

$x'_{cp} = 20.6$
 $y'_{cp} = 43.5$

$C_N^I = 0.580$
 $C_m^I = -0.0227$
 $C_b^I = .232$

$x'_{cp} = 28.9$
 $y'_{cp} = 40.1$

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TABLE VI.- Concluded.

 $[M \approx 0.85]$

(m) $M = 0.84$
 $c_{NA} = 0.62$
 $\alpha = 11.1^\circ$
 $\delta_{AL} = 1.7^\circ$ down

Orifice	Row				
	1	2	3	4	5
1	1.981	1.667	1.786	1.523	1.152
2	1.855	1.663	1.675	1.485	1.110
3	1.681	1.530	1.567	1.389	0.929
4	1.669	1.524	1.577	1.434	0.670
5	1.306	1.309	1.022	1.160	0.661
6	1.143	1.239	1.013	0.951	0.584
7	0.962	1.033	0.851	0.853	0.585
8	0.900	0.943	0.966	0.898	0.424
9	0.764	0.820	0.824	0.688	0.386
10	0.610	0.710	0.774	0.723	0.205
11	0.519	0.538	0.709	0.618	0.366
12	0.435	0.445	0.469	0.517	0.344
13	0.280	0.289	0.373	0.384	0.327
14	0.264	0.295	0.347	0.384	0.341
15	0.134	0.237	0.321	0.273	0.265
16	0.135	0.285	0.371	0.334	
17	0.148	0.243	0.278	0.330	
18	0.085	0.192	0.289	0.276	
19	- .013	.007	.155	.201	
c_n	0.697	0.732	0.765	0.707	0.590
c_m	- .0229	- .0458	- .0712	- .0676	- .0792
c_{N^I}	0.687				
c_{m^I}	- .0469				
c_b^I	.289				
			$x'_{cp} = 31.8$		
			$y'_{cp} = 42.1$		

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TABLE VII
PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE DOUGLAS X-3 WING

$$[M \approx 0.88]$$

(a) $M = 0.88$		$\alpha = 1.6^\circ$		$\alpha = 0.1^\circ$ down	
c_{NA}	$c_{NA} = -0.02$	c_{NA}	$c_{NA} = 0.06$	c_{NA}	$c_{NA} = 0.088$

Orifice	Row				
	1	2	3	4	5
1	0.172	0.147	0.352	0.368	0.136
2	•105	•214	•106	•268	•127
3	•103	•180	•095	•248	•026
4	•099	•147	•043	•209	•026
5	•068	•051	•008	•092	-
6	•043	•052	•025	-	•013
7	•042	-	•026	•017	•108
8	•034	•070	•203	•020	7
9	•048	•138	•198	•175	-
10	•032	•053	•039	•013	-
11	•020	•025	•046	•027	-
12	•038	•033	-	•013	-
13	-	•012	-	•033	-
14	-	•130	-	•020	-
15	-	•051	-	•178	-
16	-	•032	-	•152	-
17	-	•007	-	•039	-
18	-	•019	-	•013	-
19	•019	-	•026	•000	-

Orifice	Row				
	1	2	3	4	5
1	0.367	0.348	0.410	0.542	0.150
2	•265	•346	•230	•368	•185
3	•231	•275	•215	•391	•053
4	•196	•233	•151	•317	•046
5	•123	•124	•113	•183	•048
6	•088	•126	•131	•035	•066
7	•115	•098	•152	•098	•021
8	•088	•163	•245	•226	•047
9	•148	•239	•267	•225	•115
10	•065	•082	•060	•020	-
11	•035	•038	•061	•021	-
12	•039	•055	•014	•013	-
13	-	•012	-	•007	-
14	-	•039	-	•062	-
15	-	•065	-	•060	-
16	-	•067	-	•061	-
17	-	•013	-	•034	-
18	-	•000	-	•028	-
19	-	•007	-	•026	-

c_n	0.040	0.059	0.070	0.052	-0.002
c_m	-0.0110	-0.0040	-0.0052	.0093	.0134

c_n'	0.048	$x'_{cp} = 22.5$	$y'_{cp} = 37.9$	$x'_{cp} = 16.6$	$y'_{cp} = 36.9$
c_m'	.0012			.0067	.029

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TABLE VII.- Continued.
 $[M \approx 0.88]$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
(c) $M = 0.88$ $c_{NA} = 0.08$	$\alpha = 2.6^\circ$ $\delta_{BL} = 0^\circ$										
1	0.514	0.395	1.068	1.277	0.412	1	0.913	1.278	1.403	1.480	1.051
2	•343	•404	•264	•445	•183	2	•542	•598	1.083	1.175	•941
3	•290	•352	•257	•414	•053	3	•405	•448	•522	1.057	•124
4	•240	•283	•176	•359	•033	4	•387	•354	•299	•520	-0.013
5	•174	•167	•155	•233	•094	5	•279	•282	•199	•319	•047
6	•158	•143	•164	•035	•151	6	•263	•232	•242	•211	•203
7	•140	•158	•177	•149	•041	7	•253	•247	•266	•237	•027
8	•131	•188	•278	-	•060	8	•227	•269	•399	•305	-0.027
9	•189	•283	•312	•243	-	9	•273	•365	•400	•249	-0.134
10	•097	•081	•053	•000	-	10	•201	•142	•080	•040	-0.169
11	•021	•051	•067	•027	-	11	•083	•076	•061	•027	-0.061
12	•091	•068	•027	•000	-	12	•091	•061	•020	-	•020
13	-	•012	•000	•007	-	13	•000	•007	•007	-	•095
14	-	•120	•034	-	•006	-	•113	-	•027	-	•020
15	-	•059	-	•067	-	14	•087	-	•031	-	•013
16	-	•013	-	•007	-	15	-	•073	-	•107	-
17	-	•028	-	•020	•013	16	-	•027	-	•068	-0.097
18	-	•019	-	•007	•000	17	-	•028	-	•000	-0.047
19	-	•026	-	•020	•028	18	-	•019	-	•000	-0.007
					-0.007	19	•026	•020	•028	•014	
c_n	0.112	0.116	0.133	0.110	0.033	c_n	0.181	0.183	0.204	0.188	0.097
c_m	.0000	.0014	.0049	.0242	.0175	c_m	.0038	.0105	.0141	.0333	.0304
$c_N' = 0.104$		$x_{cp}' = 16.2$		$C_N' = 0.172$		$c_m' = .0091$		$y_{cp}' = 39.0$		$C_m' = .0177$	
$c_b' = .041$		$x_{cp}' = 14.7$		$C_b' = .070$		$y_{cp}' = 40.9$					

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TABLE VII.- Continued.

 $[M \approx 0.88]$

(e) $M = 0.88$
 $C_{NA} = 0.21$
 $\alpha = 4.2^\circ$
 $\delta_{aL} = 0.3^\circ$ down

Orifice	Row				
	1	2	3	4	5
1	1.077	1.458	1.574	1.623	1.231
2	.774	1.279	1.330	1.102	2
3	.604	.885	1.085	1.210	.774
4	.560	.494	.912	1.082	.124
5	.409	.342	.258	.919	-.074
6	.358	.303	.284	.341	-.013
7	.330	.342	.335	.306	.020
8	.313	.357	.450	.411	-.013
9	.362	.444	.467	.295	-.113
10	.336	.377	.199	.013	-.134
11	.090	.050	.034	.014	.000
12	.091	.047	.000	-.033	.007
13	-	.018	-.034	-.040	-.088
14	-.073	-.034	-.012	-.012	-.086
15	-.039	-.053	-.067	-.067	-.007
16	-	.027	-.007	.013	-.047
17	-	.028	-.027	-.000	-.013
18	-	.045	.000	-.007	-.020
19	-.020	-.020	-.021	-.014	.020

Orifice	Row				
	1	2	3	4	5
1	1	1.222	1.535	1.681	1.730
2	2	.906	1.370	1.439	1.201
3	3	.750	1.117	1.151	1.319
4	4	.677	.774	1.005	1.175
5	5	.494	.419	.480	1.009
6	6	.461	.364	.394	.680
7	7	.381	.350	.378	.540
8	8	.372	.409	.456	.543
9	9	.416	.502	.498	.415
10	10	.431	.469	.528	.027
11	11	.165	.088	.027	.020
12	12	.065	.047	-.067	-.079
13	13	-	.036	-.054	-.100
14	14	-.046	-.046	-.049	-.112
15	15	-.052	-.046	-.080	-.103
16	16	-.046	-.046	-.007	-.040
17	17	-.028	-.020	-.013	-.033
18	18	-.032	-.007	-.013	-.014
19	19	.020	.020	.028	.000

Orifice	Row				
	1	2	3	4	5
c_n	0.246	0.269	0.294	0.269	0.184
c_m	.0057	.0136	.0196	.0118	.0371
C_N^I	0.252	$x_{cp}^I = 16.2$	$y_{cp}^I = 41.9$		
C_m^I	.0223				
C_b^I	.105				

$x_{cp}^I = 16.9$
 $y_{cp}^I = 42.6$

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TABLE VII.- Continued.

 $[M \approx 0.88]$

(g) $M = 0.88$
 $c_{NA} = 0.31$
 $\alpha = 5.1^\circ$
 $\delta_{AL} = 0.1^\circ$ down

(h) $M = 0.89$
 $c_{NA} = 0.35$
 $\alpha = 5.4^\circ$
 $\delta_{AL} = 0.4^\circ$ down

Orifice	Row					Row					
	1	2	3	4	5						
1	1.365	1.626	1.750	1.781	1.341	1	1.511	1.675	1.808	1.804	1.394
2	.967	1.476	1.411	1.511	1.223	2	1.050	1.483	1.439	1.552	1.287
3	.846	1.174	1.234	1.383	.927	3	.913	1.282	1.324	1.401	.967
4	.751	1.139	1.054	1.233	.489	4	.835	1.207	1.166	1.308	.575
5	.565	.562	.797	1.066	.443	5	.665	.646	.930	1.117	.495
6	.525	.430	.510	.741	.418	6	.593	.528	.847	.803	.487
7	.463	.415	.469	.724	.000	7	.524	.478	.675	.795	.513
8	.428	.457	.520	.801	-.137	8	.482	.512	.604	.855	-.133
9	.460	.530	.540	.503	-.171	9	.533	.553	.517	.700	-.280
10	.477	.504	.548	.165	-.172	10	.506	.534	.545	.589	-.289
11	.327	.416	.416	.145	-.007	11	.443	.507	.571	.262	-.176
12	.089	.007	-.007	-.099	-.111	12	.372	.419	-.026	-.063	-.026
13	-.071	-.134	-.134	-.178	-.219	13	-.034	-.104	-.185	-.207	-.013
14	-.020	-.087	-.087	-.092	-.222	14	-.025	-.162	-.178	-.317	-.006
15	-.084	-.092	-.092	-.126	-.170	15	-.107	-.204	-.232	-.329	.026
16	-.052	-.026	-.026	-.000	-.046	16	-.051	-.062	-.045	-.090	
17	-.048	-.020	-.020	-.013	-.052	17	-.027	-.025	-.000	-.082	
18	-.038	-.007	-.007	-.013	-.007	18	-.062	-.026	-.038	-.039	
19	.019	.007	.007	.000	.000	19	.013	.025	.040	.013	
c_n	0.327	0.371	0.387	0.371	0.274	c_n	0.389	0.430	0.445	0.452	0.366
c_m	.0085	.0203	.0239	.0526	.0488	c_m	.0013	.0126	.0233	.0253	.0369

$c_N' = 0.346$
 $c_m' = .0294$
 $c_b' = .146$

$x'_{cp} = 16.5$
 $y'_{cp} = 42.3$

$x'_{cp} = 19.6$
 $y'_{cp} = 43.1$

Orifice	Row					Row
	1	2	3	4	5	
1	1.511	1.675	1.808	1.804	1.394	
2	1.050	1.483	1.439	1.552	1.287	
3	.913	1.282	1.324	1.401	.967	
4	.835	1.207	1.166	1.308	.575	
5	.665	.646	.930	1.117	.495	
6	.593	.528	.847	.803	.487	
7	.524	.478	.675	.795	.513	
8	.482	.512	.604	.855	-.133	
9	.533	.553	.517	.700	-.280	
10	.506	.534	.545	.589	-.289	
11	.443	.507	.571	.262	-.176	
12	.372	.419	-.026	-.063	-.026	
13	-.034	-.104	-.185	-.207	-.013	
14	-.025	-.162	-.178	-.317	-.006	
15	-.107	-.204	-.232	-.329	.026	
16	-.051	-.062	-.045	-.090		
17	-.027	-.025	-.000	-.082		
18	-.062	-.026	-.038	-.039		
19	.013	.025	.040	.013		

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TABLE VII.- Continued.
 $[M \approx 0.88]$

(1) $M = 0.89$
 $C_{NA} = 0.45$
 $\alpha = 6.2^\circ$
 $\delta_{aL} = 0.4^\circ$ down

(1) $M = 0.89$
 $C_{NA} = 0.52$
 $\alpha = 6.8^\circ$
 $\delta_{aL} = 0.4^\circ$ down

Orifice	Row					Row					
	1	2	3	4	5						
1	1.660	1.799	1.897	1.893	1.474	1	1.795	1.895	1.981	1.985	1.549
2	1.237	1.580	1.540	1.642	1.375	2	1.358	1.689	1.636	1.735	1.458
3	1.029	1.447	1.406	1.507	1.066	3	1.162	1.555	1.507	1.624	1.150
4	•991	1.289	1.265	1.408	•673	4	1.070	1.374	1.357	1.502	•779
5	•797	•879	1.213	1.026	•609	5	•905	1.105	1.125	1.304	•679
6	•683	•655	•994	•910	•549	6	•775	•791	1.067	•994	•623
7	•647	•595	•901	•911	•570	7	•730	•695	1.002	•986	•648
8	•581	•597	•825	•981	•380	8	•664	•656	1.032	1.049	•430
9	•612	•648	•665	•833	-	9	•705	•713	•787	•916	•350
10	•592	•604	•664	•838	-	10	•635	•674	•727	•921	-
11	•541	•590	•628	•502	-	11	•594	•626	•705	•796	-
12	•440	•496	•326	•120	-	12	•520	•560	•460	•202	-
13	•143	•188	-	•115	-	13	•132	•230	-	•013	-
14	•019	-	•110	-	•160	14	•095	-	•039	-	•006
15	-	•088	-	•184	-	15	-	•025	-	•165	-
16	-	•038	-	•050	-	16	-	•038	-	•044	-
17	-	•033	-	•019	-	17	-	•013	-	•013	-
18	-	•043	-	•026	-	18	-	•006	-	•032	-
19	-	•006	-	•000	-	19	-	•006	-	•000	-

Orifice	Row					Row					
	1	2	3	4	5						
c_n	0.473	0.512	0.559	0.553	0.452	c_n	0.541	0.582	0.642	0.633	0.549
c_m	- .00772	.0024	.0056	.0317	.0256	c_m	- .0186	- .0046	- .0062	.0174	.0010
c_b	0.500	22.9	x'_{cp}	y'_{cp}	.217	c_b	0.575	x'_{cp}	25.2	y'_{cp}	43.7

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TABLE VII.- Continued.
 $[M \approx 0.88]$

(k) $M = 0.89$ $\alpha = 8.4^\circ$
 $c_{NA} = 0.56$ $c_{NL} = 0.3^\circ$ down

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	2.019	2.060	2.154	2.157	1.738	1	2.136	2.179	2.296	2.182	1.711
2	1.570	1.862	1.797	1.894	1.638	2	1.696	2.003	1.899	1.933	1.569
3	1.361	1.762	1.698	1.764	1.299	3	1.525	1.805	1.805	1.795	1.270
4	1.322	1.556	1.513	1.653	0.940	4	1.485	1.722	1.653	1.693	0.849
5	1.135	1.354	1.279	1.498	0.723	5	1.289	1.485	1.366	1.438	0.706
6	0.973	1.078	1.254	1.159	0.560	6	1.144	1.346	1.349	1.096	0.600
7	0.936	0.911	1.210	1.143	0.446	7	1.031	1.066	1.248	0.946	0.545
8	0.845	0.876	1.203	0.946	0.221	8	0.990	1.016	1.265	0.940	0.330
9	0.877	0.872	0.857	0.633	0.127	9	0.993	0.991	0.847	0.726	0.242
10	0.757	0.833	0.619	0.562	-0.038	10	0.864	0.830	0.684	0.711	0.096
11	0.731	0.583	0.537	0.502	-0.052	11	0.767	0.476	0.591	0.634	0.059
12	0.489	0.437	0.255	0.328	-0.175	12	0.354	0.374	0.397	0.468	-0.026
13	0.051	0.052	0.159	0.161	-0.113	13	0.097	0.149	0.275	0.349	0.075
14	0.089	0.006	0.130	0.076	-0.122	14	0.115	0.065	0.255	0.235	0.026
15	-0.088	-0.235	-0.103	-0.144	0.144	15	-0.069	-0.121	-0.013	-0.007	0.066
16	-0.013	-0.044	0.025	-0.173	0.16	-0.013	0.031	0.121	-0.013	0.013	
17	-0.007	0.057	0.076	-0.082	0.17	-0.013	0.108	0.128	0.013	0.007	
18	-0.037	-0.006	0.101	0.013	0.18	-0.037	0.039	0.164	0.007	0.137	
19	0.025	0.032	0.112	0.117	0.19	0.031	0.025	0.106	0.025		
c_n	0.633	0.669	0.704	0.643	0.545	c_n	0.698	0.746	0.787	0.718	0.597
c_m	-0.0112	.0027	-.0169	.0154	.0210	c_m	-.0093	-.0019	-.0302	-.0150	.0088
c_b'	0.628		$x'_1 op = 23.9$			$c_N' = 0.699$		$x'_1 op = 25.8$			
			$y'_1 op = 42.1$			$c_m' = -0.0054$		$y'_1 op = 42.1$			
			$c_b' = .265$			$c_b' = .294$					

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TABLE VII.- Continued.
 $[M \approx 0.88]$

(m) $M = 0.89$ $\alpha = 10.8^\circ$
 $C_{NA} = 0.64$ $\delta_{BL} = 0.4^\circ$ down

(n) $M = 0.89$ $\alpha = 11.8^\circ$
 $C_{NA} = 0.68$ $\delta_{BL} = 0.5^\circ$ down

Orifice	Row					Row						
	1	2	3	4	5							
1	2.253	2.315	2.379	1.869	1.198	1	2.304	2.355	2.379	1.802	1.089	
2	1.849	2.127	2.036	1.787	1.074	2	1.935	2.202	2.053	1.735	.983	
3	1.706	2.001	1.887	1.624	.876	3	1.791	2.051	1.938	1.616	.802	
4	1.622	1.889	1.734	1.604	.671	4	1.719	1.948	1.633	1.510	.608	
5	1.468	1.616	1.312	1.220	.573	5	1.527	1.667	1.189	1.195	.573	
6	1.273	1.530	1.230	.932	.539	6	1.349	1.496	1.123	.865	.495	
7	1.185	1.313	.999	.806	.514	7	1.260	1.111	1.007	.806	.501	
8	1.126	1.088	1.103	.815	.414	8	1.226	.805	.979	.798	.356	
9	1.123	.697	.928	.664	.345	9	.996	.768	.824	.644	.326	
10	.564	.607	.795	.662	.156	10	.520	.691	.788	.617	.097	
11	.338	.533	.715	.623	.163	11	.431	.545	.715	.604	.157	
12	.324	.434	.456	.489	.117	12	.380	.485	.456	.470	.117	
13	.241	.260	.397	.408	.227	13	.328	.306	.429	.428	.214	
14	.281	.201	.316	.280	.206	14	.332	.279	.328	.299	.226	
15	.051	.051	.136	.073	.018	15	.126	.089	.187	.106	.270	
16	.127	.175	.287	.097	-	16	.146	.307	.319	.097	-	
17	.080	.268	.314	.159	-	17	.133	.294	.340	.185	-	
18	.025	.175	.324	.202	-	18	.081	.285	.343	.196	-	
19	.013	.000	.206	.236	-	19	-	.025	.032	.266	.289	
c_n	0.733	0.809	0.842	0.687	0.526	c_n	0.771	0.827	0.814	0.667	0.495	
c_m	- .0119	- .0165	- .0576	- .0376	- .0470	c_m	- .0193	- .0324	- .0619	- .0393	- .0465	
c_b	$c_n^1 = 0.720$ $c_m^1 = -.0195$ $c_b^1 = .292$	$x_{cp}^1 = 27.7$ $y_{cp}^1 = 40.6$					$c_n^1 = 0.718$ $c_m^1 = -.0262$ $c_b^1 = .285$	$x_{cp}^1 = 28.6$ $y_{cp}^1 = 39.7$				

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TABLE VII.- Continued.
 $[M \approx 0.88]$

(o) $M = 0.89$
 $C_{NA} = 0.76$
 $\alpha = 12.5^\circ$
 $\delta_{aL} = 0.7^\circ$ down
 $(p) M = 0.88$
 $C_{NA} = 0.80$
 $\alpha = 14.4^\circ$
 $\delta_{aL} = 1.0^\circ$ down

Orifice	Row					Row					
	1	2	3	4	5						
1	2.350	2.416	2.400	1.847	1.133	1	1.909	1.657	1.774	1.583	1.286
2	2.059	2.273	2.065	1.798	1.110	2	1.702	1.640	1.855	1.608	1.246
3	1.878	2.105	2.001	1.737	0.982	3	1.478	1.436	1.514	1.506	1.032
4	1.827	2.036	1.779	1.624	0.753	4	1.577	1.627	1.549	1.552	0.817
5	1.638	1.762	1.199	1.238	0.671	5	1.248	1.276	1.118	1.349	0.775
6	1.426	1.584	1.182	1.009	0.678	6	1.134	1.253	1.160	1.171	0.684
7	1.345	1.341	1.110	0.900	0.619	7	1.054	1.030	0.967	0.993	0.697
8	1.312	0.961	1.122	0.928	0.516	8	0.927	1.030	1.182	1.006	0.515
9	1.279	0.892	1.040	0.794	0.410	9	0.878	0.881	0.931	0.801	0.446
10	0.583	0.795	0.898	0.837	0.219	10	0.839	0.900	0.842	0.747	0.267
11	0.472	0.618	0.794	0.782	0.190	11	0.771	0.820	0.833	0.723	0.257
12	0.387	0.544	0.528	0.648	0.170	12	0.686	0.687	0.565	0.648	0.329
13	0.340	0.352	0.462	0.513	0.233	13	0.447	0.513	0.499	0.511	0.465
14	0.307	0.325	0.364	0.389	0.265	14	0.433	0.420	0.446	0.476	0.488
15	0.183	0.147	0.201	0.146	0.390	15	0.357	0.433	0.424	0.220	0.460
16	0.166	0.351	0.377	0.161	0.306	16	0.411	0.481	0.483	0.384	
17	0.140	0.365	0.366	0.366	0.343	17	0.417	0.478	0.479	0.515	
18	0.093	0.318	0.343	0.366	0.322	18	0.344	0.399	0.475	0.442	
19	-0.069	0.064	0.266	0.266	0.134	19	0.200	0.343	0.398		
c_n	0.834	0.910	0.893	0.793	0.600	c_n	0.827	0.866	0.874	0.818	0.689
c_m	-0.0232	-0.0552	-0.0742	-0.0692	-0.0678	c_m	-0.0832	-0.0957	-0.1017	-0.0891	-0.0886
c_b'	0.817	$x'_{cp} = 30.3$	$y'_{cp} = 41.2$				$c_n' = 0.803$	$x'_{cp} = 35.5$			
		$c_m' = -0.0429$	$c_b' = .336$				$c_m' = -0.0844$	$y'_{cp} = 41.8$			

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TABLE VII.-- Concluded.
 $[M \approx 0.88]$

(q) $M = 0.88$
 $c_{NA} = 0.78$
 $\alpha = 15.2^\circ$
 $c_{aL} = 0.4^\circ$ down

Orifice	Row				
	1	2	3	4	5
1	1.590	1.419	1.446	1.409	1.215
2	1.507	1.356	1.324	1.363	1.200
3	1.356	1.296	1.236	1.323	.976
4	1.395	1.280	1.178	1.262	.782
5	1.185	1.127	1.047	1.137	.699
6	1.020	1.075	1.021	1.013	.629
7	1.024	0.965	0.927	0.928	0.594
8	0.872	0.947	0.968	0.922	0.465
9	0.861	0.884	0.836	0.738	0.415
10	0.823	0.871	0.793	0.704	0.183
11	0.747	0.767	0.765	0.645	0.212
12	0.657	0.656	0.528	0.560	0.277
13	0.414	0.482	0.514	0.467	0.447
14	0.408	0.434	0.435	0.329	0.458
15	0.397	0.421	0.445	0.148	0.448
16	0.439	0.508	0.498	0.314	
17	0.425	0.480	0.449	0.458	
18	0.377	0.446	0.464	0.424	
19	0.173	0.220	0.357	0.399	
c_A	0.779	0.795	0.765	0.717	0.631
c_B	-0.0895	-0.1036	-0.1059	-0.0780	-0.0772
$c_{N'}^1$	0.726			$x'_{ep} = 36.8$	
$c_{m'}^1$	-0.0855			$y'_{ep} = 41.3$	
c_D^1	.300				

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TABLE VIII
PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE DOUGLAS X-3 WING
[$M \approx 0.90$]

(a) $M = 0.89$
 $c_{NA} = 0.06$
 $\alpha = 2.6^\circ$
 $\delta_{aL} = 0.2^\circ$ down

(b) $M = 0.89$
 $c_{NA} = 0.09$
 $\alpha = 3.1^\circ$
 $\delta_{aL} = 0.3^\circ$ down

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.538	0.455	1.198	1.279	0.665	1	0.821	1.129	1.360	1.340	0.969
2	.369	.376	.285	.507	.273	2	.444	.482	.714	1.060	.807
3	.292	.326	.219	.401	.025	3	.382	.407	.351	.657	.033
4	.289	.328	.184	.400	.068	4	.340	.368	.225	.449	.025
5	.174	.192	.131	.270	.096	5	.264	.250	.155	.301	.025
6	.200	.170	.180	.058	.205	6	.232	.211	.212	.124	.180
7	.149	.134	.202	.158	.071	7	.214	.191	.226	.216	.251
8	.166	.213	.346	.239	-.063	8	.181	.237	.394	.280	.069
9	.226	.288	.309	.205	-.133	9	.251	.313	.366	.217	.152
10	.209	.250	.290	.345	-.096	10	.269	.332	.358	.324	.115
11	.119	.060	.058	-.020	-.104	11	.138	.078	.083	.045	.135
12	.074	.045	-.032	-.032	-.000	12	.080	-.051	-.032	-.050	.000
13	.011	-.026	-.013	-.122	-.000	13	-.006	-.013	-.032	-.115	-.031
14	.089	.148	.101	-.006	-.013	14	.038	.115	-.047	.038	.019
15	-.069	-.165	-.148	-.249	-.007	15	-.100	-.196	-.230	-.307	-.007
16	-.032	-.031	-.013	-.000	-.000	16	-.044	-.012	-.013	-.038	-.013
17	-.020	.044	-.025	-.025	-.025	17	-.013	.032	.013	-.013	-.013
18	-.012	.013	-.000	-.006	-.026	18	-.043	.026	-.000	-.026	-.000
19	.031	.032	-.059	-.026	-.026	19	.050	.025	.039	.000	-.000
c_n	0.140	0.145	0.171	0.157	0.058	c_n	0.165	0.193	0.205	0.188	0.106
c_m	-.0017	-.0028	.0011	.0153	.0192	c_m	.0041	.0015	.0067	.0247	.0224
c_b	$c_N' = 0.137$ $c_m' = .0047$ $c_b' = .056$		$x'_{cp} = 21.6$ $y'_{cp} = 40.8$			$c_N' = 0.175$ $c_m' = .0104$ $c_b' = .072$			$x'_{cp} = 19.1$ $y'_{cp} = 41.2$		

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TABLE VIII.- Continued.

 $[M \approx 0.90]$

(c) $M = 0.69$
 $c_{N_A} = 0.16$
 $\alpha = 3.7^\circ$
 $Q_{A,L} = 0.4^\circ$ down

(d) $M = 0.69$
 $c_{N_A} = 0.19$
 $\alpha = 4.2^\circ$
 $Q_{A,L} = 0.5^\circ$ down

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.993	1.315	1.480	1.509	1.122	1	1.045	1.433	1.578	1.591	1.206
2	0.638	1.143	1.114	1.224	0.984	2	0.761	1.227	1.210	1.300	1.060
3	0.489	0.547	0.975	1.094	0.657	3	0.593	1.013	1.053	1.179	0.769
4	0.460	0.451	0.489	0.946	-	4	0.570	0.523	0.874	1.058	0.381
5	0.345	0.307	0.236	0.601	-	5	0.466	0.355	0.299	0.904	0.246
6	0.330	0.261	0.244	0.198	0.056	6	0.345	0.343	0.291	0.362	0.025
7	0.304	0.274	0.292	0.273	0.218	7	0.376	0.297	0.332	0.337	0.076
8	0.304	0.312	0.433	0.355	-	8	0.310	0.378	0.439	0.412	-
9	0.336	0.369	0.422	0.298	-	9	0.393	0.424	0.445	0.322	-
10	0.323	0.401	0.457	0.329	-	10	0.376	0.424	0.473	0.340	-
11	0.248	0.322	0.216	0.65	-	11	0.299	0.416	0.58	-	0.058
12	0.129	0.045	-	0.070	-	12	0.220	0.209	-	0.082	-
13	-	0.045	-	0.070	-	13	-	0.068	-	0.121	-
14	-	0.000	-	0.083	-	14	-	0.019	-	0.102	-
15	-	0.137	-	0.239	-	15	-	0.142	-	0.244	-
16	-	0.056	-	0.025	-	16	-	0.050	-	0.031	-
17	-	0.020	-	0.038	-	17	-	0.039	-	0.038	-
18	-	0.024	-	0.019	-	18	-	0.030	-	0.006	-
19	-	0.025	-	0.013	-	19	-	0.019	-	0.038	-
				0.039	0.013					0.046	0.013
c_n	0.223	0.243	0.260	0.260	0.178						
c_m	.0053	.0128	.0131	.0311	.0316						
c_b	$c_{N'} = 0.232$ $c_m' = 0.0178$ $c_b' = .099$			$x'_{cp} = 17.4$ $y'_{cp} = 42.6$							

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.993	1.315	1.480	1.509	1.122	1	1.045	1.433	1.578	1.591	1.206
2	0.638	1.143	1.114	1.224	0.984	2	0.761	1.227	1.210	1.300	1.060
3	0.489	0.547	0.975	1.094	0.657	3	0.593	1.013	1.053	1.179	0.769
4	0.460	0.451	0.489	0.946	-	4	0.570	0.523	0.874	1.058	0.381
5	0.345	0.307	0.236	0.601	-	5	0.466	0.355	0.299	0.904	0.246
6	0.330	0.261	0.244	0.198	0.056	6	0.345	0.343	0.291	0.362	0.025
7	0.304	0.274	0.292	0.273	0.218	7	0.376	0.297	0.332	0.337	0.076
8	0.304	0.312	0.433	0.355	-	8	0.310	0.378	0.439	0.412	-
9	0.336	0.369	0.422	0.298	-	9	0.393	0.424	0.445	0.322	-
10	0.323	0.401	0.457	0.329	-	10	0.376	0.424	0.473	0.340	-
11	0.248	0.322	0.216	0.65	-	11	0.299	0.416	0.58	-	0.058
12	0.129	0.045	-	0.070	-	12	0.220	0.209	-	0.082	-
13	-	0.045	-	0.070	-	13	-	0.068	-	0.121	-
14	-	0.000	-	0.083	-	14	-	0.019	-	0.102	-
15	-	0.137	-	0.239	-	15	-	0.142	-	0.244	-
16	-	0.056	-	0.025	-	16	-	0.050	-	0.031	-
17	-	0.020	-	0.038	-	17	-	0.039	-	0.038	-
18	-	0.024	-	0.019	-	18	-	0.030	-	0.006	-
19	-	0.025	-	0.013	-	19	-	0.019	-	0.038	-
				0.039	0.013					0.046	0.013
c_n	0.261	0.291	0.319	0.299	0.231						
c_m	.0039	.0109	.0160	.0371	.0352						
c_b	$c_{N'} = 0.278$ $c_m' = 0.0188$ $c_b' = .119$			$x'_{cp} = 18.2$ $y'_{cp} = 42.7$							

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TABLE VIII.-- Continued.

 $[M \approx 0.90]$

(e) $M = 0.90$
 $c_{NA} = 0.26$
 $\delta_{aL}^{\alpha} = 4.8^{\circ}$
 $\delta_{aL} = 0.1$ down

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.278	1.565	1.667	1.664	1.312	1	1.422	1.587	1.754	1.750	1.366
2	.866	1.358	1.321	1.416	1.135	2	.956	1.419	1.410	1.476	1.207
3	.769	1.162	1.153	1.270	.846	3	.826	1.218	1.227	1.340	.917
4	.703	.948	1.008	1.177	.464	4	.782	1.147	1.076	1.243	.532
5	.552	.451	.603	1.011	.370	5	.613	.586	.850	1.077	.455
6	.448	.416	.482	.646	.348	6	.543	.513	.779	.704	
7	.430	.328	.395	.678	.190	7	.469	.425	.549	.745	.447
8	.374	.442	.509	.618	-.130	8	.453	.490	.570	.777	.067
9	.443	.471	.493	.395	-.205	9	.491	.517	.507	.571	-.195
10	.416	.471	.526	.463	-.138	10	.461	.529	.558	.533	-.295
11	.349	.406	.483	.236	-.229	11	.424	.427	.528	.382	-.392
12	.309	.346	-.019	-.043	-.013	12	.338	.438	.355	.212	-.130
13	-.011	-.076	-.175	-.183	-.012	13	.241	.242	.226	-.056	.000
14	-.044	-.152	-.180	-.254	-.025	14	.030	-.006	-.153	-.303	
15	-.197	-.354	-.377	-.354	-.019	15	-.259	-.445	-.480	-.422	
16	-.062	-.049	-.062	-.107	16	-.067	-.090	-.116	-.147		
17	-.019	-.006	-.025	-.068	17	-.006	-.006	-.049	-.127		
18	-.054	-.013	-.025	-.076	18	-.047	-.019	-.036	-.106		
19	.037	.019	.032	.006	19	.030	.018	.038	.000		
c_n	0.312	0.254	0.365	0.363	0.272	c_n	0.369	0.424	0.452	0.439	0.340
c_m	.0052	.0153	.0241	.0472	.0446	c_m	-.0017	.0059	.0114	.0381	.0398
$c_{n'}$	0.332					$c_{n'}$	0.402				
$c_{m'}$.0250					$c_{m'}$.0161				
$c_{b'}$.142					$c_{b'}$.173				
			$x'_{cp} = 17.5$						$x'_{cp} = 21.0$		
			$y'_{cp} = 42.6$						$y'_{cp} = 42.9$		

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TABLE VIII.- Continued.

 $[M \approx 0.90]$

(g) $M = 0.91$
 $c_{NA} = 0.36$
 $\alpha = 5.7^\circ$
 $\delta_{aL} = 0.4^\circ$ down

(h) $M = 0.91$
 $c_{NA} = 0.41$
 $\alpha = 6.2^\circ$
 $\delta_{aL} = 0.4^\circ$ down

Orifice	Row				
	1	2	3	4	5
1	1.553	1.686	1.801	1.805	1.402
2	1.080	1.478	1.407	1.528	1.269
3	• 917	• 320	• 305	• 385	• 984
4	• 895	• 219	• 124	• 298	• 572
5	• 690	• 712	• 939	• 124	• 515
6	• 614	• 579	• 862	• 797	• 460
7	• 549	• 499	• 804	• 805	• 496
8	• 502	• 540	• 655	• 871	• 341
9	• 553	• 570	• 580	• 715	• 180
10	• 518	• 552	• 604	• 622	-
11	• 455	• 501	• 575	• 450	-
12	• 416	• 469	• 381	• 274	-
13	• 281	• 275	• 338	• 134	-
14	• 126	• 126	• 262	• 011	-
15	-	• 184	-	• 348	-
16	-	• 012	-	• 100	-
17	-	• 025	-	• 006	-
18	-	• 000	-	• 024	-
19	-	• 053	• 012	• 050	-
c_n	0.438	0.485	0.505	0.507	0.417
c_m	- .0138	- .0065	.0031	.0265	.0226

Orifice	Row				
	1	2	3	4	5
1	1.673	1.746	1.841	1.876	1.473
2	1.194	1.533	1.489	1.592	1.323
3	1.020	1.415	1.369	1.480	1.040
4	• 970	1.282	1.203	1.387	• 654
5	• 792	• 831	1.001	1.209	• 576
6	• 701	• 643	• 978	• 860	• 507
7	• 620	• 570	• 899	• 876	• 532
8	• 565	• 596	• 819	• 919	• 383
9	• 591	• 619	• 622	• 775	• 337
10	• 559	• 607	• 646	• 834	• 061
11	• 524	• 529	• 630	• 543	-
12	• 439	• 511	• 411	• 304	-
13	• 303	• 294	• 368	• 201	-
14	• 132	• 287	• 011	-	-
15	-	• 137	-	• 144	-
16	• 006	-	• 312	-	-
17	• 056	-	• 082	-	• 188
18	• 058	-	• 006	-	• 084
19	• 053	-	• 024	-	• 086
c_n	0.488	0.530	0.559	0.575	0.483
c_m	- .0192	- .0169	- .0017	.0158	.0062

$c_{N_A}' = 0.465$
 $c_m' = .0045$
 $c_b' = .200$

$x'_{cp} = 24.0$
 $y'_{cp} = 43.1$

$x'_{cp} = 25.5$
 $y'_{cp} = 43.5$

$c_b' = .225$

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TABLE VIII.- Continued.
 $[M \approx 0.90]$

(1) $M = 0.90$ $\alpha = 6.9^\circ$
 $c_{NA} = 0.47$ $\delta_{AL} = 0.4^\circ$ down

(J) $M = 0.90$ $\alpha = 7.6^\circ$
 $c_{NA} = 0.52$ $\delta_{AL} = 0.4^\circ$ down

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.801	1.837	1.937	1.956	1.544	1	1.888	1.928	2.032	2.051	1.615
2	1.292	1.660	1.563	1.680	1.433	2	1.430	1.740	1.661	1.736	1.512
3	1.146	1.502	1.465	1.560	1.127	3	1.249	1.613	1.560	1.647	1.223
4	1.069	1.371	1.299	1.468	.766	4	1.161	1.442	1.402	1.525	.878
5	.855	1.037	1.087	1.287	.655	5	.997	1.212	1.172	1.364	.715
6	.788	.780	1.056	.940	.601	6	.808	.908	1.141	1.066	.678
7	.691	.649	.971	.964	.594	7	.760	.760	1.083	1.027	.655
8	.659	.661	1.030	1.008	.425	8	.738	.766	1.116	1.089	.473
9	.679	.680	.745	.866	.373	9	.767	.747	.946	.915	.403
10	.623	.680	.712	.913	.073	10	.670	.753	.813	.979	.158
11	.587	.569	.691	.814	-.012	11	.655	.649	.739	.753	.037
12	.480	.542	.465	.418	-.159	12	.533	.572	.441	.322	-.061
13	.303	.373	.422	.195	-.083	13	.216	.428	.350	.061	-.136
14	.132	.244	.011	-.078	.048	14	.114	.159	.022	.006	-.139
15	-	.125	-.276	-.316	-.073	15	-	.089	-.234	-.273	-.224
16	.018	-	.112	-.192	-.261	16	-	.006	-.171	-.198	-.236
17	.113	-	.030	-.030	-.042	17	.125	-.012	-.048	-.060	-.060
18	.093	-	.006	-.018	-.049	18	.111	-.018	-.006	-.012	-.012
19	.077	-	.036	.075	.012	19	.101	.042	.113	.056	-.056
c_n	0.544	0.587	0.628	0.646	0.562	c_n	0.593	0.637	0.690	0.684	0.612
c_m	-.0240	-.0119	-.0073	-.0055	-.0114	c_m	-.0244	-.0096	-.0107	-.0044	-.0131
c_b	0.580	$x'_{cp} = 26.4$	$y'_{cp} = 43.9$			c_b	0.627	$x'_{cp} = 26.3$	$y'_{cp} = 43.7$		
		$c_m' = -0.0084$					$c_m' = -0.0079$				
		$c_b' = .254$					$c_b' = .274$				

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TABLE VIII.-- Continued.
 $[M \approx 0.90]$

$$(k) M = 0.90 \quad \alpha = 8.5^\circ \quad \alpha_{aL} = 0.4^\circ \text{ down}$$

$$(l) M = 0.90 \quad \alpha = 9.4^\circ \quad \alpha_{aL} = 1.1^\circ \text{ down}$$

$$c_{NA} = 0.55 \quad c_{NA} = 0.63$$

Orifice	Row					Row					
	1	2	3	4	5						
1	2.016	2.026	2.127	2.146	1.717	1	2.089	2.164	2.232	2.266	1.821
2	1.511	1.842	1.751	1.856	1.567	2	1.626	1.962	1.867	1.946	1.693
3	1.336	1.716	1.640	1.765	1.302	3	1.479	1.867	1.776	1.862	1.398
4	1.285	1.562	1.497	1.630	0.973	4	1.402	1.698	1.601	1.736	1.200
5	1.099	1.314	1.250	1.457	0.312	5	1.264	1.442	1.344	1.582	0.837
6	0.969	1.061	1.234	1.145	0.642	6	1.088	1.295	1.305	1.248	0.661
7	0.887	0.863	1.194	1.153	0.490	7	1.013	1.030	1.298	1.201	0.588
8	0.863	0.870	1.202	1.170	0.239	8	0.974	0.984	1.296	1.106	0.299
9	0.855	0.856	1.068	0.606	0.186	9	0.988	0.966	0.899	0.752	0.247
10	0.723	0.838	0.628	0.556	0.012	10	0.828	0.893	0.742	0.671	0.103
11	0.718	0.723	0.539	0.463	0.031	11	0.805	0.678	0.624	0.568	0.098
12	0.562	0.517	0.278	0.328	0.061	12	0.604	0.518	0.375	0.418	0.031
13	0.178	0.300	0.187	0.189	-0.059	13	0.195	0.312	0.247	0.274	0.113
14	0.102	0.122	0.129	0.114	-0.042	14	0.150	0.128	0.213	0.210	0.085
15	-0.048	-0.204	-0.043	-0.081	-0.062	15	-0.018	-0.096	0.030	-0.044	0.037
16	-0.048	-0.224	-0.030	-0.121	0.16	16	0.000	-0.118	0.120	-0.036	
17	-0.031	-0.084	-0.030	-0.078	0.17	17	-0.013	0.018	0.054	-0.012	
18	-0.041	-0.049	-0.012	-0.086	0.18	18	0.017	0.000	0.084	0.018	
19	-0.065	-0.054	-0.063	-0.012	0.19	19	0.053	0.036	0.000		
c_n	0.640	0.679	0.703	0.655	0.574	c_n	0.715	0.760	0.785	0.738	0.658
c_m	-0.0195	-0.0014	-0.0094	.0140	.0109	c_m	-0.0262	-0.0090	-0.0283	-0.0052	-0.0115
c_b	$c_N^t = 0.638$ $c_m^t = -0.0029$ $c_b^t = .270$	$x_{cp}^t = 24.6$ $y_{cp}^t = 42.3$				$c_N^t = 0.717$ $c_m^t = -.0094$ $c_b^t = .305$	$x_{cp}^t = 26.3$ $y_{cp}^t = 42.5$				

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TABLE VIII.- Continued.
 $[M \approx 0.90]$

(m) $M = 0.90$ $\alpha = 10.9^\circ$
 $C_{NA} = 0.68$ $\delta_{aL} = 1.0^\circ$ down

(n) $M = 0.90$ $\alpha = 12.3^\circ$
 $C_{NA} = 0.73$ $\delta_{aL} = 0.6^\circ$ down

Orifice	Row					Row					
	1	2	3	4	5						
1	2.214	2.268	2.325	2.240	1.740	1	2.359	2.384	2.390	1.962	1.476
2	1.779	2.055	1.996	1.984	1.566	2	1.980	2.214	1.862	1.215	
3	1.652	1.992	1.878	1.852	1.333	3	1.816	2.094	1.956	1.762	1.007
4	1.591	1.808	1.726	1.790	1.937	4	1.753	1.973	1.834	1.723	1.736
5	1.428	1.559	1.428	1.558	0.830	5	1.581	1.683	1.415	1.382	0.684
6	1.213	1.487	1.405	1.200	0.701	6	1.381	1.611	1.392	1.026	0.617
7	1.169	1.259	1.353	1.034	0.624	7	1.312	1.436	1.155	0.955	0.617
8	1.114	1.136	1.318	1.016	0.425	8	1.257	1.039	1.163	0.894	0.458
9	1.107	1.068	1.001	0.812	0.355	9	1.242	0.813	0.977	0.751	0.424
10	0.944	0.880	0.843	0.780	0.206	10	0.687	0.703	0.909	0.767	0.208
11	0.880	0.649	0.733	0.703	0.233	11	0.440	0.608	0.787	0.721	0.247
12	0.615	0.493	0.465	0.531	0.171	12	0.354	0.539	0.578	0.601	0.000
13	0.243	0.318	0.374	0.439	0.249	13	0.305	0.376	0.468	0.522	0.000
14	-	0.216	0.220	0.297	0.341	14	0.375	0.332	0.418	0.392	0.000
15	-	0.018	0.024	0.115	0.131	15	0.179	0.163	0.245	0.175	0.000
16	-	0.018	-	0.012	0.210	0.073	0.16	0.199	0.291	0.375	0.183
17	-	0.019	-	0.150	0.175	0.174	0.17	0.151	0.357	0.334	0.235
18	-	0.035	-	0.116	0.233	0.153	0.18	0.100	0.331	0.373	0.260
19	-	0.036	-	0.024	0.137	0.160	0.19	-	0.042	0.115	0.258
c _n	0.796	0.839	0.874	0.804	0.703	c _n	0.829	0.899	0.930	0.792	0.584
c _m	-0.0284	-0.0214	-0.0509	-0.0373	-0.0446	c _m	-0.0290	-0.0434	-0.0777	-0.0579	-0.0324

$C_N^1 = 0.788$	$x_{cp}^1 = 28.3$	$C_N^1 = 0.804$
$C_m^1 = -0.0259$	$y_{cp}^1 = 42.2$	$C_m^1 = -0.0352$
$C_b^1 = .333$		$C_b^1 = .327$

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TABLE VIII.- Concluded.
 $[M \approx 0.90]$

(o) $M = 0.90$
 $c_{NA} = 0.79$
 $\alpha = 13.3^\circ$
 $\delta_{aL} = 0.4^\circ$ up

Orifice	Row				
	1	2	3	4	5
1	2.420	2.451	2.354	1.913	1.244
2	2.103	2.281	2.110	1.802	1.150
3	1.950	2.184	2.028	1.807	0.971
4	1.910	2.063	1.848	1.760	0.769
5	1.704	1.792	1.472	1.391	0.704
6	1.502	1.631	1.424	1.111	0.661
7	1.392	1.380	1.217	1.014	0.637
8	1.360	1.066	1.193	0.995	0.482
9	1.340	0.922	1.039	0.834	0.429
10	0.630	0.829	0.951	0.850	0.173
11	0.522	0.661	0.846	0.786	0.213
12	0.436	0.577	0.591	0.645	0.150
13	0.353	0.411	0.498	0.578	0.236
14	0.361	0.336	0.400	0.366	0.229
15	0.242	0.184	0.211	0.203	0.234
16	0.213	0.360	0.261	0.173	
17	0.210	0.367	0.367	0.226	
18	0.148	0.335	0.353	0.238	
19	- 0.042	0.116	0.255	0.302	
c_n	0.887	0.948	0.946	0.821	0.607
c_m	- .0843	- .0513	- .0785	- .0633	- .0595
c_b					
			$x'_{cp} = 31.1$		
			$y'_{cp} = 40.4$		

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TABLE IX
PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE DOUGLAS X-3 WING

$[M \approx 0.92]$

(a) $M = 0.92$
 $c_{NA} = 0.02$
 $\delta_{aL} = 1.7^\circ$ up
 $\delta_{aL} = 0.9^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.170	0.215	0.363	0.354	0.128	1	0.323	0.291	0.338	0.474	0.136
2	0.165	0.209	0.150	0.293	0.151	2	0.206	0.281	0.199	0.333	0.183
3	0.104	0.177	0.089	0.330	0.024	3	0.193	0.249	0.145	0.402	0.048
4	0.126	0.154	0.072	0.205	-	4	0.143	0.226	0.104	0.286	0.024
5	0.072	0.040	0.008	0.118	0.043	5	0.111	0.096	0.063	0.142	0.049
6	0.048	0.041	0.055	-	0.040	6	0.096	0.082	0.102	.000	0.042
7	0.048	0.064	0.073	-	0.080	7	0.088	0.112	0.105	-	0.032
8	0.024	0.016	0.198	0.164	0.164	8	0.064	0.057	0.230	-	0.229
9	0.019	0.049	0.043	-	0.066	9	0.077	0.080	0.093	.025	-
10	0.071	0.080	0.115	0.104	-	10	0.136	0.166	0.231	0.153	-
11	0.032	0.069	0.166	0.213	-	11	0.101	0.156	0.221	0.282	-
12	0.107	0.105	0.055	0.127	-	12	0.119	0.119	0.105	0.186	-
13	0.049	0.056	0.049	-	0.068	13	0.093	0.068	0.068	0.037	-
14	0.281	0.236	0.222	-	0.170	14	0.293	0.248	0.244	-	0.267
15	-	0.229	-	0.330	-	15	-	0.253	-	0.335	-
16	-	0.079	-	0.114	-	16	-	0.127	-	0.161	-
17	-	0.070	-	0.006	-	17	-	0.057	-	0.012	-
18	-	0.024	-	0.025	-	18	-	0.053	-	0.019	-
19	-	0.006	-	0.024	-	19	-	0.024	.012	0.051	-

Orifice	(b) $M = 0.92$ $c_{NA} = 0.06$ $\delta_{aL} = 1.1^\circ$ up $\delta_{aL} = 1.1^\circ$ up					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.323	0.291	0.338	0.474	0.136	1	0.206	0.281	0.199	0.333	0.183
2	0.281	0.193	0.249	0.402	0.048	2	0.145	0.226	0.104	0.286	0.024
3	0.193	0.143	0.226	0.402	0.048	3	0.111	0.096	0.063	0.142	0.049
4	0.143	0.111	0.096	0.142	0.049	4	0.096	0.082	0.102	.000	0.042
5	0.111	0.096	0.082	0.142	0.049	5	0.082	0.102	.000	0.042	0.049

$c_n = 0.042$	$x'_{cp} = 12.1$	$x'_{cp} = 14.4$
$c_m = -0.036$	$y'_{cp} = .0019$	$y'_{cp} = .025$
$c_b = .015$		

$c_n = 0.055$	0.046	0.072	0.044	-0.019	$c_n = 0.084$	0.089	0.102	0.071	-0.014
$c_m = -0.036$	$-.0019$	$.0001$	$.0175$	$.0259$	$c_m = -.0033$	$.0001$	$-.0019$	$.0205$	$.0297$
$c_b = .015$									

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TABLE IX.- Continued.

 $[M \approx 0.92]$

(a) $M = 0.92$
 $c_{NA} = 0.10$
 $\alpha = 2.6^\circ$
 $\delta_{BL} = 1.1^\circ$ up

Orifice	Row				
	1	2	3	4	5
1	0.467	0.374	1.018	1.184	0.613
2	.312	.367	.298	.453	.317
3	.280	.304	.177	.392	.024
4	.226	.206	.192	.334	.030
5	.151	.160	.094	.227	.049
6	.151	.130	.149	.040	.066
7	.103	.168	.145	.104	.130
8	.143	.106	.307	.245	.139
9	.121	.117	.154	.055	.036
10	.212	.251	.308	.342	-
11	.151	.236	.275	.305	-
12	.183	.123	.122	.187	-
13	.115	.074	.067	.086	-
14	.298	.265	.226	.260	-
15	-	.258	.328	.362	-
16	-	.169	.238	.303	-
17	-	.070	.036	.061	-
18	-	.047	.037	.048	-
19	-	.006	.024	.044	-

(d) $M = 0.92$
 $c_{NA} = 0.16$
 $\alpha = 3.4^\circ$
 $\delta_{BL} = 1.0^\circ$ up

Orifice	Row				
	1	2	3	4	5
1	0.859	1.166	1.287	1.380	0.984
2	.508	.637	1.022	1.104	.892
3	.406	.366	.005	.544	-
4	.359	.393	.732	.018	-
5	.277	.263	.328	.037	-
6	.246	.211	.203	.119	.042
7	.198	.247	.217	.183	.296
8	.221	.179	.354	.301	.109
9	.215	.281	.301	.140	.055
10	.288	.318	.374	.323	.189
11	.214	.321	.378	.317	.365
12	.230	.202	.152	.192	.475
13	.174	.129	.103	.086	.179
14	.339	.314	.215	.127	.037
15	-	.275	.357	.392	.012
16	-	.241	.344	.381	.214
17	-	.063	.067	.079	.139
18	-	.076	.043	.048	.093
19	-	.018	.012	.031	.025

(e) $M = 0.92$
 $c_{NA} = 0.16$
 $\alpha = 3.4^\circ$
 $\delta_{BL} = 1.0^\circ$ up

Orifice	Row				
	1	2	3	4	5
c _n	0.128	0.124	0.158	0.132	0.029
c _m	-.0048	.0012	.0043	.0251	.0347
c _n	0.197	0.205	0.228	0.218	0.150
c _m	-.0020	.0060	.0098	.0299	.0385

(f) $M = 0.92$
 $c_{NA} = 0.16$
 $\alpha = 3.4^\circ$
 $\delta_{BL} = 1.0^\circ$ up

Orifice	Row				
	1	2	3	4	5
c _n	0.117	x' _{cp} = 16.7	y' _{cp} = 39.5	c _n ' = 0.198	x' _{cp} ' = 18.1
c _m	-.0098	.0046	.0251	c _m ' = .0036	y' _{cp} ' = 42.4
c _n	0.197	0.205	0.228	0.218	0.150
c _m	-.0020	.0060	.0098	.0299	.0385

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TABLE IX.-Continued.

$$\begin{aligned} \alpha &= 3.9^\circ & \alpha &= 4.3^\circ \\ \zeta_{\text{aL}} &= 0.6 \text{ up} & \zeta_{\text{aL}} &= 0.5 \text{ up} \\ c_{N_A} &= 0.24 & c_N &= 0.92 \end{aligned}$$

Orifice	Row					C_{N}^{\prime}	C_{M}^{\prime}	C_{D}^{\prime}	x'_{op}	y'_{op}
	1	2	3	4	5					
1	0.984	1.333	1.446	1.522	1.169					
2	.752	1.197	1.198	1.283	1.022					
3	.606	.929	.983	1.167	.759					
4	.545	.603	.867	.988	.364					
5	.414	.371	.332	.864	.284					
6	.369	.320	.317	.464	.147					
7	.281	.323	.285	.354	.104					
8	.320	.289	.443	.434	.066					
9	.357	.393	.395	.278	.066					
10	.336	.411	.458	.391	-.066					
11	.280	.363	.446	.283	-.134					
12	.268	.309	.259	.190	-.347					
13	.242	.152	.168	.109	-.254					
14	.311	.352	.246	.018	-.054					
15	-.177	-.245	-.308	-.365	-.006					
16	-.238	-.416	-.418	-.235						
17	-.062	-.126	-.132	-.137						
18	-.035	-.073	-.101	-.092						
19	.030	.012	.044	-.037						
C_{H}	0.2714	0.299	0.338	0.333	0.231					
C_{M}	-.0060	.0074	.0102	.0275	.0421					
C_{D}	0.293					$x'_{\text{op}} = 20.4$				
						$y'_{\text{op}} = 43.1$				

$$(e) \quad \begin{aligned} N &= 0.92 \\ C_N &= 0.20 \end{aligned} \quad \begin{aligned} \alpha &= 3.9^{\circ} \\ \zeta_{a_L} &= 0.60 \quad \text{up} \end{aligned}$$

Orifice	Row					$c_{N'} = 0.254$	$c_m' = .0154$	$c_b' = .109$
	1	2	3	4	5			
1	0.922	1.305	1.402	1.470	1.093			
2	.649	1.089	1.143	1.230	1.000			
3	.513	.702	.929	1.090	.697			
4	.463	.469	.806	.934	.288			
5	.392	.308	.225	.828	.109			
6	.283	.273	.263	.276	.024			
7	.282	.308	.246	.244	.092			
8	.266	.233	.397	.370	.096			
9	.289	.339	.353	.200	.078			
10	.326	.363	.424	.320	.073			
11	.237	.352	.411	.277	.171			
12	.257	.243	.223	.185	.373			
13	.205	.165	.138	.097	.260			
14	.336	.341	.355	.006	.048			
15	-.225	-.276	-.333	-.409	-.012			
16	-.251	-.423	-.413	-.224				
17	-.075	-.096	-.120	-.143				
18	-.070	-.073	-.083	-.086				
19	-.024	-.012	-.037	-.025				
c_n	0.238	0.257	0.306	0.287	0.189			
c_m	-.0033	.0096	.0122	.0293	.0429			

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TABLE IX.- Continued.

(g) $M = 0.92$ $\alpha = 4.9^\circ$
 $c_{NA} = 0.30$ $c_{AL} = 0.4^\circ$ up

$[M \approx 0.92]$

Orifice	Row				
	1	2	3	4	5
1	1.180	1.473	1.562	1.590	1.229
2	.840	1.273	1.252	1.376	1.098
3	.731	1.045	1.100	1.235	.828
4	.667	.903	.968	1.098	.439
5	.515	.449	.640	.932	.349
6	.439	.392	.455	.620	.363
7	.406	.401	.396	.604	.341
8	.367	.336	.481	.641	.083
9	.413	.440	.425	.379	.030
10	.411	.451	.453	.505	.057
11	.360	.424	.424	.500	.030
12	.297	.375	.330	.225	-.091
13	.258	.188	.246	.121	-.329
14	.335	.370	.290	.077	-.377
15	-.165	-.191	-.191	-.278	-.297
16	-.208	-.386	-.388	-.331	-.006
17	-.075	-.149	-.210	-.149	-.06
18	-.029	-.085	-.136	-.079	-.025
19	.053	.012	.012	.031	-.031

Orifice	Row				
	1	2	3	4	5
1	1.360	1.598	1.670	1.697	1.305
2	.959	1.373	1.348	1.437	1.174
3	.824	1.161	1.193	1.351	.906
4	.773	1.123	1.069	1.177	.509
5	.631	.597	.847	1.038	.421
6	.532	.463	.770	.697	.415
7	.475	.495	.553	.690	.444
8	.428	.416	.565	.801	.267
9	.487	.500	.521	.637	.072
10	.468	.512	.540	.534	.006
11	.440	.463	.541	.404	-.006
12	.331	.429	.348	.266	-.000
13	.306	.219	.305	.151	.465
14	.382	.375	.345	.148	.289
15	-.136	-.167	-.205	-.241	-.031
16	-.178	-.345	-.339	-.385	
17	-.161	-.221	-.311	-.166	
18	-.040	-.097	-.166	-.079	
19	.059	.024	.037	-.018	

$c_N = 0.419$	$x'_{op} = 23.5$
$c_m = .0063$	$y'_{op} = 43.6$
$c_b = .183$	

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TABLE IX.- Continued.

 $[M \approx 0.92]$

(1) $M = 0.93$
 $c_{NA} = 0.41$

$\alpha = 6.0^\circ$
 $\delta_{AL} = 0.1^\circ$ up

(J) $M = 0.93$
 $c_{NA} = 0.46$

$\alpha = 6.7^\circ$
 $\delta_{AL} = 0.3^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.502	1.636	1.741	1.776	1.368	1	1.615	1.712	1.812	1.854	1.449
2	1.032	1.444	1.421	1.509	1.275	2	1.143	1.511	1.497	1.590	1.356
3	•910	1.263	1.256	1.391	•993	3	1.004	1.369	1.363	1.472	1.054
4	•856	1.210	1.147	1.241	•561	4	•938	1.262	1.231	1.341	•644
5	•693	•684	•917	1.100	•493	5	•757	•873	•985	1.152	•561
6	•571	•542	•871	•760	•474	6	•659	•657	•970	•839	•516
7	•537	•542	•750	•752	•474	7	•625	•600	•869	•824	•536
8	•498	•472	•681	•873	•368	8	•548	•571	•914	•929	•400
9	•530	•542	•557	•703	•280	9	•606	•609	•654	•781	•355
10	•491	•548	•599	•714	•090	10	•545	•621	•647	•833	•233
11	•495	•514	•577	•447	•079	11	•540	•549	•638	•686	•248
12	•343	•465	•384	•308	-	12	•380	•503	•446	•370	•060
13	•338	•243	•347	•181	-	13	•367	•337	•392	•222	-
14	•346	•382	•389	•190	-	14	•331	•396	•441	•212	-
15	-	•094	-	•155	-	15	-	•076	-	•114	-
16	-	•148	-	•310	-	16	-	•094	-	•249	-
17	-	•192	-	•256	-	17	-	•129	-	•213	-
18	-	•121	-	•175	-	18	-	•132	-	•240	-
19	-	•071	-	•060	-	19	-	•099	-	•006	-
c_A	0.421	0.461	0.517	0.537	0.440	c_A	0.471	0.520	0.593	0.598	0.517
c_B	- .0169	.0021	.0013	.0109	.0125	c_B	- .0147	- .0034	- .0160	.0011	- .0100
c_{NA}	0.465	$x'_{CP} = 24.4$				c_{NA}	0.516	$x'_{CP} = 26.7$			
c_m	•0026	$y'_{CP} = 44.3$				c_m	- .0085	$y'_{CP} = 44.9$			
c_b	.206					c_b	.232				

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TABLE IX.- Continued.
 $[M \approx 0.92]$

$$(k) M = 0.93 \quad \alpha = 7.1^\circ \quad \delta_{aL} = 0.4^\circ \text{ up}$$

$$(l) M = 0.93 \quad \alpha = 7.7^\circ \quad \delta_{aL} = 0.4^\circ \text{ up}$$

$$C_{NA} = 0.51 \quad C_{NA} = 0.57$$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.752	1.811	1.893	1.920	1.493	1	1.815	1.900	1.956	1.998	1.562
2	1.260	1.584	1.550	1.665	1.377	2	1.372	1.646	1.623	1.697	1.453
3	1.110	1.444	1.415	1.531	1.091	3	1.203	1.529	1.469	1.624	1.161
4	1.025	1.314	1.275	1.386	0.723	4	1.107	1.385	1.361	1.442	.804
5	.840	1.042	1.044	1.233	.601	5	.932	1.158	1.105	1.317	.672
6	.719	.734	1.029	.892	.590	6	.797	.868	1.105	.961	.648
7	.686	.684	.938	.915	.559	7	.747	.739	1.000	.969	.631
8	.624	.609	.996	.974	.435	8	.701	.696	1.080	1.053	.470
9	.661	.656	.743	.839	.390	9	.729	.733	.911	.892	.449
10	.578	.662	.687	.867	.250	10	.641	.721	.781	.938	.262
11	.613	.604	.684	.788	.295	11	.637	.654	.738	.848	.343
12	.425	.514	.481	.475	.126	12	.471	.544	.522	.633	.216
13	.409	.384	.426	.275	-.163	13	.441	.438	.474	.413	-.064
14	.313	.407	.462	.217	-.113	14	.307	.425	.490	.206	-.065
15	-.023	-.024	-.024	-.101	-.128	15	-.006	-.047	-.089	-.122	-.073
16	-.065	-.028	-.208	-.183	-.256	16	-.029	-.173	-.124	-.226	
17	-.086	-.086	-.159	-.207	-.323	17	-.043	-.118	-.148	-.264	
18	-.109	-.087	-.209	-.229	-.253	18	-.046	-.167	-.176	-.223	
19	-.087	-.047	-.047	-.061	.000	19	-.000	-.083	-.141	.018	
c_n	0.520	0.566	0.638	0.644	0.559	c_n	0.571	0.625	0.703	0.708	0.624
c_m	-.0193	-.0086	-.0181	-.0023	-.0206	c_m	-.0259	-.0164	-.0288	-.0147	-.0362
C_N'	0.570			$x'_{cp} = 26.9$		$C_N' = 0.629$			$x'_{cp} = 28.3$		
C_A'	-.0110			$y'_{cp} = 44.3$		$C_A' = -0.0295$			$y'_{cp} = 44.4$		
C_D'	.253					$C_D' = .279$					

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TABLE IX.- Continued.

 $[M \approx 0.92]$

(n) $M = 0.93$
 $c_{NA} = 0.60$
 $\alpha = 8.2^\circ$
 $\delta_{aL} = 0.6^\circ$ up

(n) $M = 0.93$
 $c_{NA} = 0.66$
 $\alpha = 9.1^\circ$
 $\delta_{aL} = 0.1^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.902	1.953	2.011	2.045	1.640	1	2.042	2.079	2.151	2.162	1.771
2	1.444	1.732	1.679	1.792	1.515	2	1.540	1.864	1.808	1.902	1.639
3	1.258	1.584	1.556	1.687	1.232	3	1.413	1.755	1.665	1.796	1.364
4	1.180	1.510	1.431	1.521	0.891	4	1.327	1.643	1.548	1.672	1.019
5	1.033	1.244	1.167	1.386	0.720	5	1.171	1.369	1.296	1.492	0.857
6	0.890	0.947	1.082	1.039	0.706	6	0.975	1.216	1.311	1.194	0.793
7	0.801	0.809	1.079	1.024	0.673	7	0.932	0.980	1.212	1.171	0.776
8	0.786	0.760	1.134	1.125	0.511	8	0.917	0.871	1.257	1.236	0.576
9	0.797	0.781	1.007	0.952	0.461	9	0.889	0.888	1.127	1.071	0.484
10	0.675	0.775	0.840	0.991	0.310	10	0.778	0.859	1.051	0.932	0.196
11	0.686	0.688	0.774	0.927	0.344	11	0.735	0.777	0.750	0.612	0.193
12	0.506	0.592	0.564	0.692	0.313	12	0.598	0.675	0.392	0.434	0.120
13	0.478	0.481	0.509	0.545	-	13	0.419	0.517	0.314	0.263	0.041
14	0.242	0.461	0.534	0.206	0.012	14	0.236	0.461	0.231	0.182	0.113
15	0.012	0.089	-	0.072	-	15	0.029	0.100	0.101	-	0.037
16	-	0.006	-	0.127	-	16	0.088	-	0.093	0.112	-
17	-	0.012	-	0.089	-	17	0.104	-	0.030	0.107	-
18	-	0.011	-	0.106	-	18	0.074	-	0.054	0.076	-
19	-	0.017	-	0.124	-	19	0.000	-	0.118	0.000	0.018
c_n	0.616	0.681	0.754	0.763	0.672	c_m	0.698	0.773	0.827	0.783	0.798
c_m	-0.0294	-0.0251	-0.0379	-0.0230	-0.0439	c_m	-0.0397	-0.0392	-0.0440	-0.0559	-0.0412
						c_n'	0.745	x'_{ep} = 29.1	y'_{ep} = 43.4	x'_{ep} = 29.0	y'_{ep} = 43.4
						c_m'	-0.0300				
						c_b'	.301				

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TABLE IX.- Continued.

 $[M \approx 0.92]$

(o) $M = 0.93$ $\alpha = 9.9^\circ$
 $c_{M_A} = 0.70$ $c_{a_L} = 0.6$

(p) $M = 0.93$ $\alpha = 10.9^\circ$
 $c_{M_A} = 0.77$ $c_{a_L} = 0.3^\circ$ down

Orifice	Row					Row					
	1	2	3	4	5						
1	2.062	2.158	2.179	2.244	1.806	1	2.181	2.263	2.297	2.315	1.915
2	1.663	1.938	1.917	1.977	1.711	2	1.792	2.047	1.990	2.080	1.820
3	1.494	1.813	1.747	1.870	1.430	3	1.650	1.930	1.842	1.948	1.544
4	1.428	1.725	1.652	1.755	1.108	4	1.600	1.836	1.731	1.851	1.190
5	1.274	1.465	1.357	1.541	0.937	5	1.421	1.551	1.445	1.648	0.979
6	1.078	1.345	1.368	1.275	0.864	6	1.233	1.488	1.452	1.345	0.766
7	1.004	1.107	1.261	1.220	0.826	7	1.151	1.341	1.364	1.229	0.729
8	1.019	0.960	1.329	1.326	0.560	8	1.120	1.095	1.095	1.207	0.454
9	0.978	0.974	1.207	1.115	0.462	9	1.102	1.082	1.033	0.919	0.414
10	0.849	0.920	0.936	0.785	0.215	10	0.946	0.938	0.889	0.762	0.274
11	0.835	0.846	0.846	0.710	0.650	11	0.903	0.807	0.752	0.674	0.308
12	0.651	0.689	0.684	0.499	0.157	12	0.663	0.629	0.548	0.546	0.247
13	0.431	0.476	0.374	0.342	0.134	13	0.442	0.476	0.475	0.396	0.245
14	0.290	0.414	0.309	0.242	0.179	14	0.397	0.372	0.414	0.348	0.298
15	0.082	0.112	0.112	0.179	0.055	15	0.158	0.195	0.263	0.116	0.122
16	0.124	0.000	0.000	0.224	0.036	16	0.153	0.157	0.325	0.131	-
17	0.123	0.077	0.077	0.184	0.065	17	0.099	0.278	0.303	0.153	-
18	0.115	0.048	0.048	0.182	0.054	18	0.120	0.240	0.300	0.175	-
19	0.029	-	0.077	0.068	0.085	19	-	0.029	0.059	0.197	0.182
c_n	0.767	0.835	0.876	0.828	0.786	c_m	0.849	0.913	0.932	0.858	0.807
c_m	-0.0500	-0.0416	-0.0571	-0.0258	-0.0492	c_m	-0.0575	-0.0551	-0.0736	-0.0383	-0.0506
c_N'	0.793	$x'_{cp} = 29.8$	$y'_{cp} = 43.1$			c_m'	0.853	$x'_{cp} = 30.6$			
c_m'	-0.0386					c_b'	-0.081				
c_b'	0.344						0.362				

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TABLE IX.- Continued.

 $[M \approx 0.92]$

(q) $M = 0.93$
 $C_{NA} = 0.83$
 $\alpha = 12.0^\circ$
 $\delta_{aL} = 0.5^\circ$ down
(r) $M = 0.92$
 $C_{NA} = 0.89$
 $\alpha = 16.7^\circ$
 $\delta_{aL} = 0.6^\circ$ down

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	2.269	2.303	2.354	2.380	1.970	1	1.871	1.708	1.943	1.551	1.291
2	1.896	2.134	2.055	2.136	1.866	2	1.746	1.683	1.889	1.487	1.260
3	1.743	1.978	1.897	2.019	1.593	3	1.588	1.612	1.448	1.071	
4	1.680	1.938	1.816	1.906	1.235	4	1.698	1.617	1.836	1.379	.848
5	1.513	1.636	1.528	1.732	1.037	5	1.467	1.432	1.404	1.294	.751
6	1.324	1.558	1.528	1.421	.828	6	1.299	1.374	1.358	1.073	.742
7	1.226	1.472	1.432	1.273	.738	7	1.239	1.203	1.098	1.034	.655
8	1.210	1.187	1.450	1.228	.533	8	1.067	1.136	1.123	1.024	.526
9	1.194	1.140	1.013	.917	.476	9	1.050	1.007	.958	.872	.481
10	1.997	.954	.922	.855	.306	10	.885	.995	.932	.852	.236
11	.969	.810	.827	.769	.340	11	.861	.872	.758	.872	.276
12	.666	.656	.634	.649	.272	12	.714	.766	.695	.680	.398
13	.486	.472	.537	.500	.325	13	.584	.611	.645	.542	.486
14	.422	.398	.482	.379	.326	14	.499	.573	.583	.485	.563
15	.206	.238	.294	.154	.227	15	.505	.565	.589	.267	.490
16	.195	.227	.374	.168		16	.520	.612	.624	.460	
17	.179	.351	.340	.207		17	.513	.601	.621	.550	
18	.127	.307	.348	.206		18	.466	.560	.614	.521	
19	-.023	.137	.137	.278	.244	19	.261	.318	.525	.481	
c_n	0.905	0.968	0.989	0.917	0.858	c_n	0.931	0.971	0.993	0.835	0.702
c_m	-.0634	-.0636	-.0660	-.0512	-.0624	c_m	-.1051	-.1249	-.1279	-.1058	-.0917
c_b'	0.907	$x'_{cp} = 31.3$	$y'_{cp} = 42.4$				$c_n' = 0.876$	$x'_{cp} = 26.8$			
	-0.0575						$c_m' = -0.1035$				
	$.385$						$c_b' = .357$				

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TABLE IX.- Concluded.

 $[M \approx 0.92]$

(a) $M = 0.91$
 $C_{NA} = 0.89$
 $\alpha = 17.6^\circ$
 $\delta_{aL} = 0.1^\circ$ up

Orifice	Flow				
	1	2	3	4	5
1	1.840	1.662	1.785	1.541	1.327
2	1.6704	1.674	1.634	1.485	1.264
3	1.619	1.547	1.589	1.453	1.081
4	1.647	1.631	1.541	1.375	.856
5	1.472	1.421	1.339	1.298	.788
6	1.343	1.346	1.276	1.099	.743
7	1.274	1.214	1.140	1.043	.679
8	1.171	1.081	1.157	1.058	.543
9	1.072	1.010	1.009	.910	.509
10	952	986	953	.866	.208
11	881	924	917	.784	.266
12	791	804	.695	.692	.377
13	632	654	.663	.559	.496
14	582	585	.588	.423	.550
15	533	618	.576	.257	.538
16	597	629	.605	.458	
17	593	667	.614	.543	
18	482	595	.590	.514	
19	305	351	.492	.454	
C_n	0.972	0.977	0.957	0.841	0.717
C_m	-1.1204	-1.1323	-1.1398	-1.1044	-0.944
	$C_N' = 0.880$		$x'_{cp} = 37.4$		
	$C_m' = -1.090$		$y'_{cp} = 40.6$		
	$C_D' = .358$				

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TABLE X
PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE DOUGLAS X-3 WING
[$M \approx 0.96$]

(a) $M = 0.95$
 $C_{NA} = 0.01$
 $\alpha = 1.8^\circ$
 $\delta_{aL} = 0.2^\circ$ down

(b) $M = 0.95$
 $C_{NA} = 0.05$
 $\alpha = 2.2^\circ$
 $\delta_{aL} = 0.2^\circ$ down

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.159	0.192	0.237	0.301	0.107	1	0.304	0.261	0.360	0.453	0.129
2	.147	.179	.104	.312	.142	2	.221	.273	.148	.341	.135
3	.100	.165	.087	.273	.014	3	.179	.237	.123	.323	.029
4	.090	.152	.043	.241	.005	4	.150	.210	.101	.322	.016
5	.064	.022	.014	.126	.016	5	.100	.079	.042	.162	.044
6	.014	.051	.063	—	.057	6	.071	.088	.113	—	.014
7	.043	.022	.036	—	.072	7	.071	.065	.101	—	.043
8	.007	.044	.205	.161	—	8	.064	.066	.269	.190	.027
9	.017	.016	.050	.016	—	9	.063	.055	.077	.022	.022
10	.063	.082	.070	.071	.000	10	.090	.127	.119	.093	.038
11	—	.011	.041	.121	.089	11	.062	.114	.198	.118	.083
12	.064	.077	.033	.081	.022	12	.106	.077	.082	.108	.067
13	.024	.017	.005	.022	—	13	.069	.044	.044	.077	—
14	.234	.188	.127	.157	—	14	.224	.194	.132	.168	.099
15	.075	.044	.022	—	.079	15	.097	.065	.028	—	.034
16	.135	.005	.054	—	.071	16	.157	.027	.071	—	.071
17	—	.057	.120	.137	—	17	—	.006	.136	.142	—
18	—	.248	—	.061	—	18	—	.222	—	.039	.130
19	.005	—	.125	—	.159	19	.022	—	.109	—	.078
											.022
c_n	0.048	0.061	0.070	0.074	0.003	c_n	0.089	0.094	0.118	0.102	0.031
c_m	-.0050	-.0072	-.0115	-.0009	.0097	c_m	-.0097	-.0108	-.0212	-.0014	.0007
c_b	$c_{N'} = 0.056$	$x'_{cp} = 32.6$	$y'_{cp} = 40.7$				$c_{N'} = 0.089$	$x'_{cp} = 34.1$			
	$c_{m'} = -0.0042$						$c_{m'} = -.0082$				
	$c_{b'} = .023$						$c_{b'} = .036$				

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TABLE X.- Continued.
 $[M \approx 0.96]$

(e) $M = 0.95$
 $c_{NA} = 0.21$
 $\alpha = 3.9^\circ$
 $\delta_{AL} = 0.2^\circ$ up

(f) $M = 0.95$
 $c_{NA} = 0.26$
 $\alpha = 4.4^\circ$
 $\delta_{AL} = 0.4^\circ$ up

Orifice	Row					Row	
	1	2	3	4	5		
1	0.858	1.190	1.299	1.361	0.990	1	0.944
2	.603	1.008	1.029	1.100	.893	2	.705
3	.465	.544	.842	.995	.610	3	.586
4	.420	.425	.680	.825	.133	4	.525
5	.319	.272	.190	.708	.022	5	.412
6	.264	.240	.232	.164	.011	6	.335
7	.227	.222	.202	.207	.011	7	.270
8	.220	.233	.388	.314	.135	8	.277
9	.233	.209	.243	.121	.141	9	.284
10	.274	.329	.362	.301	.027	10	.342
11	.214	.304	.406	.257	.044	11	.265
12	.207	.242	.186	.173	.039	12	.254
13	.186	.116	.125	.105	-.070	13	.215
14	.310	.248	.188	.173	.011	14	.337
15	.199	.158	.016	-.017	-.112	15	.209
16	.238	.064	.043	-.055	-.055	16	.270
17	-.028	.185	.120	-.038	-.038	17	.011
18	-.153	.143	.194	-.100	-.100	18	-.100
19	-.059	-.059	-.130	-.107	-.017	19	-.096
c_n	0.246	0.281	0.319	0.282	0.186	c_n	0.300
c_m	-.0243	-.0250	-.0226	.0077	.0165	c_m	-.0315
c_b	0.264	-.0125	.111			c_b	0.321
						x'_{cp}	29.7
						y'_{cp}	42.0
						c_n'	-.0169
						c_m'	.135
						x'_{cp}	30.3
						y'_{cp}	42.2

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TABLE X.- Continued.

[$M \approx 0.96$]

(E) $M = 0.95$ $\alpha = 4.9^\circ$
 $c_{NA} = 0.30$ $c_{BL} = 0.6^\circ$ up
 $c_{BL} = 0.6^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.107	1.357	1.482	1.521	1.151	1	1.266	1.485	1.558	1.576	1.262
2	.792	1.205	1.159	1.285	1.053	2	.870	1.270	1.234	1.343	1.119
3	.663	.984	1.034	1.157	.786	3	.755	1.073	1.01	1.215	.857
4	.636	.896	.886	1.026	.399	4	.710	1.060	.975	1.102	.452
5	.467	.393	.616	.895	.312	5	.539	.509	.748	.948	.390
6	.398	.370	.434	.541	.303	6	.464	.416	.700	.627	.352
7	.333	.336	.330	.542	.309	7	.406	.382	.433	.627	.377
8	.311	.327	.443	.633	.097	8	.364	.396	.522	.720	.224
9	.369	.383	.360	.257	.038	9	.410	.450	.430	.498	.081
10	.373	.433	.458	.425	-.038	10	.432	.477	.496	.475	-.022
11	.321	.385	.476	.317	-.050	11	.362	.417	.508	.352	-.027
12	.264	.368	.299	.205	-.033	12	.319	.429	.318	.250	-.038
13	.244	.166	.220	.132	-.112	13	.265	.180	.280	.131	-.085
14	.336	.275	.238	.124	-.049	14	.370	.294	.290	.166	-.022
15	.241	.244	.104	-.056	-.084	15	.249	.247	.130	-.050	-.055
16	.297	.149	.022	-.109	-.109	16	.331	.205	.075	-.087	
17	.135	.255	.120	-.070	-.120	17	.268	.306	.118	-.069	
18	-.005	.231	.145	-.116	-.022	18	.177	.261	.165	-.071	
19	-.118	-.136	-.073	-.022	-.19	19	-.106	-.075	-.017	-.066	
c_n	0.349	0.405	0.418	0.395	0.303	c_n	0.411	0.463	0.482	0.454	0.359
c_m	-.0382	-.0379	-.0279	.0114	.0199	c_m	-.0520	-.0443	-.0345	.0038	.0101

(H) $M = 0.96$ $\alpha = 5.2^\circ$
 $c_{NA} = 0.36$ $c_{BL} = 0.6^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.266	1.485	1.558	1.576	1.262	1	1.270	1.234	1.343	1.119	
2	.870	1.270	1.234	1.343	.857	2	1.073	1.01	1.215	.857	
3	.755	1.073	1.01	1.215	.755	3	.710	1.060	.975	1.102	.452
4	.710	1.060	.975	1.102	.710	4	.539	.509	.748	.948	.390
5	.539	.509	.748	.948	.539	5	.464	.416	.700	.627	.352
6	.464	.416	.700	.627	.464	6	.406	.382	.433	.627	.377
7	.406	.382	.433	.627	.406	7	.364	.396	.522	.720	.224
8	.364	.396	.522	.720	.364	8	.410	.450	.430	.498	.081
9	.410	.450	.430	.498	.410	9	.432	.477	.477	.475	-.022
10	.432	.477	.477	.475	.432	10	.432	.477	.496	.475	-.022
11	.362	.417	.417	.352	.362	11	.319	.429	.318	.352	-.027
12	.319	.429	.318	.318	.319	12	.265	.180	.280	.131	-.085
13	.265	.180	.280	.131	.265	13	.370	.294	.290	.166	-.022
14	.370	.294	.290	.166	.370	14	.249	.247	.130	-.050	-.055
15	.249	.247	.130	-.050	.249	15	.16	.331	.205	.075	-.087
16	.16	.331	.205	.075	.16	16	.17	.268	.306	.118	-.069
17	.17	.268	.306	.118	.17	17	.18	.177	.261	.165	-.071
18	.18	.177	.261	.165	.18	18	.19	-.106	-.075	-.017	-.066
c_n	0.349	0.405	0.418	0.395	0.303	c_n	0.411	0.463	0.482	0.454	0.359
c_m	-.0382	-.0379	-.0279	.0114	.0199	c_m	-.0520	-.0443	-.0345	.0038	.0101

$$x'_{cp} = 31.2 \\ y'_{cp} = 42.3$$

$$c_N' = 0.431 \\ c_m' = -0.0265 \\ c_b' = .182$$

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TABLE X.- Continued.

 $[M \approx 0.96]$

$$(1) M = 0.96 \quad \alpha = 5.6^\circ \quad \delta_{aL} = 0.6^\circ \text{ up}$$

$$(j) M = 0.96 \quad \alpha = 6.2^\circ \quad \delta_{aL} = 0.6^\circ \text{ up}$$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.351	1.539	1.629	1.633	1.258	1	1.519	1.616	1.696	1.693	1.319
2	.943	1.348	1.500	1.407	1.182	2	1.064	1.408	1.392	1.482	1.221
3	.805	1.145	1.144	1.279	.907	3	.908	1.253	1.241	1.340	.954
4	.792	1.131	1.039	1.159	.495	4	.864	1.178	1.14	1.265	.577
5	.609	.594	.811	1.010	.433	5	.692	.733	.885	1.084	.464
6	.542	.488	.797	.684	.405	6	.603	.580	.878	.738	.457
7	.462	.424	.639	.670	.415	7	.545	.508	.751	.746	.469
8	.406	.432	.606	.778	.331	8	.496	.488	.785	.826	.368
9	.466	.471	.490	.584	.231	9	.521	.524	.560	.680	.305
10	.437	.509	.528	.545	-.005	10	.488	.562	.570	.738	.140
11	.418	.462	.541	.408	-.000	11	.483	.482	.588	.511	.169
12	.298	.440	.351	.288	-.005	12	.349	.466	.393	.319	.076
13	.309	.191	.307	.163	-.069	13	.342	.261	.344	.201	-.037
14	.408	.316	.330	.176	-.011	14	.423	.326	.404	.213	.065
15	.270	.279	.146	-.028	-.083	15	.307	.294	.173	-.011	-.055
16	.336	.215	.129	-.070	-.070	16	.373	.273	.182	-.038	-.038
17	.302	.333	.129	-.053	-.053	17	.329	.364	.166	-.037	-.037
18	.218	.315	.171	-.060	-.060	18	.285	.352	.191	-.033	-.033
19	-.095	-.075	-.028	-.066	-.066	19	-.079	-.043	-.045	-.060	-.060
c_N	0.449	0.500	0.532	0.499	0.411	c_N	0.508	0.552	0.597	0.566	0.474
c_M	-.0552	-.0488	-.0405	.0019	.0009	c_M	-.0634	-.0558	-.0502	-.0128	-.0188
c_B'	0.473					c_N'	0.530				
						c_M'	-.0411				
						c_B'	.228				
						x'_{cp}	31.8				
						y'_{cp}	42.7				

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TABLE X.- Continued.

 $[M \approx 0.96]$

(k) $M = 0.96$ $\alpha = 6.8^\circ$ $c_{BL} = 0.6^\circ$ up
 $c_{NA} = 0.50$ $c_{BL} = 0.6^\circ$ up

(l) $M = 0.96$ $\alpha = 7.5^\circ$ $c_{BL} = 0.6^\circ$ up
 $c_{NA} = 0.56$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.622	1.714	1.771	1.781	1.399	1	1.733	1.793	1.854	1.892	1.504
2	1.168	1.503	1.446	1.543	1.300	2	1.338	1.578	1.536	1.632	1.374
3	0.995	1.348	1.314	1.413	1.006	3	1.104	1.450	1.410	1.516	1.101
4	0.969	1.238	1.194	1.311	0.647	4	1.068	1.369	1.297	1.415	0.759
5	0.784	0.898	0.963	1.155	0.541	5	0.878	1.091	1.028	1.228	0.607
6	0.647	0.682	0.936	0.796	0.500	6	0.733	0.784	1.042	0.890	0.585
7	0.616	0.580	0.838	0.839	0.514	7	0.702	0.666	0.912	0.926	0.570
8	0.553	0.554	0.905	0.907	0.390	8	0.646	0.642	1.012	0.975	0.445
9	0.584	0.601	0.643	0.741	0.370	9	0.675	0.657	0.841	0.802	0.409
10	0.530	0.607	0.624	0.809	0.189	10	0.574	0.779	0.882	0.882	0.298
11	0.546	0.533	0.622	0.716	0.257	11	0.581	0.586	0.683	0.801	0.297
12	0.387	0.489	0.426	0.378	0.191	12	0.424	0.534	0.481	0.593	0.247
13	0.381	0.328	0.361	0.239	0.111	13	0.406	0.394	0.432	0.327	0.233
14	0.451	0.349	0.420	0.214	0.108	14	0.479	0.360	0.456	0.262	0.260
15	0.339	0.322	0.222	0.050	0.050	15	0.351	0.355	0.304	0.067	0.183
16	0.374	0.289	0.193	-0.032	0.005	16	0.423	0.342	0.236	0.016	
17	0.363	0.413	0.226	0.005	0.005	17	0.403	0.468	0.270	0.005	
18	0.312	0.407	0.208	-0.044	0.000	18	0.344	0.441	0.283	0.000	
19	-0.058	-0.021	-0.028	-0.061	0.000	19	-0.021	-0.011	-0.034	-0.055	
c_N	0.558	0.610	0.651	0.621	0.540	c_n	0.620	0.679	0.729	0.702	0.618
c_m	-0.0682	-0.0624	-0.0563	-0.0200	-0.0355	c_m	-0.0742	-0.0705	-0.0698	-0.0357	-0.0555
c_b	0.585	-0.0481	0.332	0.430		c_b	0.656	x'_{cp}	0.650		
							c_m	-0.0591			
							c_b	.284			
								y'_{cp}	43.3		

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TABLE X.- Continued.
 $[M \approx 0.96]$

(m) $M = 0.95$
 $C_{NA} = 0.62$
 $\alpha = 8.1^\circ$
 $\delta_{AL} = 0.8^\circ$ up

(n) $M = 0.95$
 $C_{NA} = 0.66$
 $\alpha = 8.6^\circ$
 $\delta_{AL} = 0.8^\circ$ up

Orifice	Row					Row					
	1	2	3	4	5						
1	1.856	1.890	1.941	1.937	1.573	1	1.931	1.942	2.009	2.033	1.611
2	1.396	1.671	1.626	1.727	1.465	2	1.442	1.745	1.688	1.759	1.532
3	1.195	1.543	1.503	1.598	1.199	3	1.261	1.624	1.549	1.662	1.273
4	1.141	1.433	1.381	1.516	0.843	4	1.218	1.501	1.441	1.556	0.913
5	0.974	1.182	1.117	1.345	0.698	5	1.068	1.263	1.182	1.362	0.754
6	0.836	0.918	1.131	0.987	0.657	6	0.895	1.043	1.210	1.103	0.722
7	0.755	0.769	1.024	0.994	0.639	7	0.813	0.842	1.054	1.032	0.679
8	0.727	0.732	1.022	1.074	0.940	8	0.799	0.784	1.167	1.134	0.523
9	0.747	0.726	0.971	0.899	0.454	9	0.822	0.793	1.023	0.939	0.486
10	0.639	0.742	0.785	0.940	0.262	10	0.683	0.780	0.894	0.991	0.300
11	0.662	0.645	0.752	0.888	0.309	11	0.680	0.687	0.813	0.923	0.337
12	0.495	0.569	0.522	0.665	0.292	12	0.528	0.614	0.694	0.792	0.292
13	0.476	0.451	0.499	0.526	0.272	13	0.463	0.474	0.527	0.576	0.320
14	0.546	0.406	0.509	0.323	0.305	14	0.563	0.462	0.550	0.442	0.333
15	0.422	0.376	0.350	0.112	0.234	15	0.439	0.401	0.389	0.202	0.285
16	0.468	0.376	0.291	0.055	-	16	0.485	0.403	0.324	0.093	-
17	0.428	0.503	0.304	0.065	-	17	0.440	0.547	0.315	0.086	-
18	0.325	0.487	0.290	0.000	-	18	0.310	0.527	0.290	0.017	-
19	-	0.005	0.005	-	0.062	-	0.072	0.016	-	0.023	-
c_n	0.685	0.742	0.797	0.776	0.682						
c_m	-0.0841	-0.0789	-0.0798	-0.0487	-0.0654						
c_n	0.726	0.796	0.852	0.831	0.728						
c_m	-0.0863	-0.0868	-0.0866	-0.0599	-0.0736						
C_N^1	0.720	$x_{cp}^1 = 24.5$				$C_N^1 = 0.771$					
C_m^1	-0.0687	$y_{cp}^1 = 43.4$				$C_m^1 = -0.0763$					
C_b^1	0.312					$C_b^1 = .334$					
						$x_{cp}^1 = 24.9$					
						$y_{cp}^1 = 43.4$					

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TABLE X.- Continued.
 $[M \approx 0.96]$

(o) $M = 0.95$
 $c_{NA} = 0.71$
 $\alpha = 9.3^\circ$
 $\delta_{AL} = 0.8^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.962	2.033	2.069	2.086	1.704	1	2.017	2.066	2.106	2.150	1.745
2	1.530	1.825	1.770	1.854	1.616	2	1.615	1.891	1.806	1.899	1.619
3	1.367	1.696	1.628	1.748	1.336	3	1.489	1.787	1.694	1.782	1.349
4	1.291	1.623	1.505	1.643	0.998	4	1.401	1.675	1.567	1.689	1.048
5	1.151	1.333	1.237	1.452	0.806	5	1.285	1.408	1.292	1.514	0.897
6	0.970	1.208	1.251	1.129	0.768	6	1.083	1.303	1.319	1.231	0.821
7	0.888	0.953	1.138	1.122	0.731	7	1.010	1.068	1.241	1.204	0.804
8	0.874	0.861	1.236	1.190	0.596	8	0.983	0.967	1.285	1.237	0.629
9	0.882	0.874	1.110	1.020	0.544	9	0.953	0.936	1.160	1.067	0.564
10	0.733	0.857	1.034	1.040	0.346	10	0.817	0.899	1.116	1.101	0.435
11	0.740	0.747	0.888	0.977	0.389	11	0.776	0.823	1.024	1.048	0.451
12	0.578	0.667	0.646	0.745	0.349	12	0.616	0.704	0.725	0.810	0.391
13	0.499	0.520	0.600	0.645	0.370	13	0.549	0.541	0.544	0.704	0.462
14	0.620	0.519	0.593	0.515	0.389	14	0.637	0.561	0.628	0.624	0.457
15	0.462	0.424	0.451	0.326	0.337	15	0.494	0.437	0.495	0.419	0.397
16	0.525	0.458	0.375	0.208	0.16	16	0.529	0.485	0.447	0.356	
17	0.385	0.598	0.338	0.146	0.17	17	0.521	0.637	0.354	0.236	
18	0.279	0.573	0.254	0.022	0.18	18	0.515	0.597	0.267	0.145	
19	0.038	0.044	0.000	-0.011	0.19	19	0.125	0.158	0.088	0.086	
c_n	0.774	0.869	0.917	0.893	0.789	c_n	0.855	0.926	0.979	0.970	0.844
c_m	-0.0920	-0.0972	-0.1004	-0.0740	-0.0858	c_m	-0.1083	-0.1051	-0.1140	-0.0968	-0.1004
c_b	0.833	-0.0866	$x'_{cp} = 35.4$	$y'_{cp} = 43.3$		c_n'	0.896				
						c_m'	-0.0995				
						c_b'	$.388$				

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Orifice	(p) $M = 0.96$					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.962	2.033	2.069	2.086	1.704	1	2.017	2.066	2.106	2.150	1.745
2	1.530	1.825	1.770	1.854	1.616	2	1.615	1.891	1.806	1.899	1.619
3	1.367	1.696	1.628	1.748	1.336	3	1.489	1.787	1.694	1.782	1.349
4	1.291	1.623	1.505	1.643	0.998	4	1.401	1.675	1.567	1.689	1.048
5	1.151	1.333	1.237	1.452	0.806	5	1.285	1.408	1.292	1.514	0.897
6	0.970	1.208	1.251	1.129	0.768	6	1.083	1.303	1.319	1.231	0.821
7	0.888	0.953	1.138	1.122	0.731	7	1.010	1.068	1.241	1.204	0.804
8	0.874	0.861	1.236	1.190	0.596	8	0.983	0.967	1.285	1.237	0.629
9	0.882	0.874	1.110	1.020	0.544	9	0.953	0.936	1.160	1.067	0.564
10	0.733	0.857	1.034	1.040	0.346	10	0.817	0.899	1.116	1.101	0.435
11	0.740	0.747	0.888	0.977	0.389	11	0.776	0.823	1.024	1.048	0.451
12	0.578	0.667	0.646	0.745	0.349	12	0.616	0.704	0.725	0.810	0.391
13	0.499	0.520	0.600	0.645	0.370	13	0.549	0.561	0.544	0.704	0.462
14	0.620	0.519	0.593	0.515	0.389	14	0.637	0.628	0.624	0.457	0.397
15	0.462	0.424	0.451	0.326	0.337	15	0.494	0.437	0.495	0.419	0.397
16	0.525	0.458	0.375	0.208	0.16	16	0.529	0.485	0.447	0.356	
17	0.385	0.598	0.338	0.146	0.17	17	0.521	0.637	0.354	0.236	
18	0.279	0.573	0.254	0.022	0.18	18	0.515	0.597	0.267	0.145	
19	0.038	0.044	0.000	-0.011	0.19	19	0.125	0.158	0.088	0.086	
c_n	0.774	0.869	0.917	0.893	0.789	c_n	0.855	0.926	0.979	0.970	0.844
c_m	-0.0920	-0.0972	-0.1004	-0.0740	-0.0858	c_m	-0.1083	-0.1051	-0.1140	-0.0968	-0.1004
c_b	0.833	-0.0866	$x'_{cp} = 35.4$	$y'_{cp} = 43.3$		c_n'	0.896				
						c_m'	-0.0995				
						c_b'	$.388$				

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TABLE X.- Continued.

 $[M \approx 0.96]$

$$(q) M = 0.96 \quad (r) M = 0.96 \quad \alpha = 10.8^\circ \quad \delta_{aL} = 0.5^\circ \text{ up}$$

$$C_N = 0.81 \quad C_m = 0.85 \quad \delta_{aL} = 0.5^\circ \text{ up}$$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	2.058	2.133	2.161	2.205	1.819	1	2.042	2.08	2.268	2.284	1.871
2	1.712	1.944	1.882	1.961	1.671	2	1.800	2.041	1.929	2.030	1.763
3	1.540	1.819	1.712	1.814	1.406	3	1.645	1.914	1.820	1.923	1.503
4	1.498	1.728	1.640	1.770	1.086	4	1.584	1.807	1.697	1.830	1.158
5	1.328	1.473	1.307	1.578	0.972	5	1.416	1.549	1.442	1.627	1.055
6	1.146	1.368	1.403	1.267	0.847	6	1.267	1.422	1.426	1.375	0.905
7	1.148	1.214	1.263	1.253	0.863	7	1.156	1.358	1.358	1.375	0.897
8	1.107	1.051	1.043	1.259	0.659	8	1.114	1.137	1.408	1.383	1.722
9	1.003	0.995	1.216	1.143	0.625	9	1.078	1.073	1.281	1.190	0.671
10	0.858	0.974	1.170	1.119	0.449	10	0.931	1.019	1.244	1.199	0.514
11	0.825	0.848	1.100	1.099	0.503	11	0.880	0.945	1.180	1.135	0.537
12	0.666	0.746	0.789	0.873	0.437	12	0.727	0.821	0.880	0.922	0.470
13	0.577	0.588	0.723	0.763	0.665	13	0.623	0.645	0.781	0.789	0.535
14	0.678	0.640	0.682	0.633	0.524	14	0.719	0.654	0.751	0.690	0.574
15	0.539	0.482	0.551	0.471	0.415	15	0.573	0.483	0.613	0.516	0.465
16	0.554	0.529	0.471	0.379	0.317	16	0.593	0.542	0.450	0.449	
17	0.551	0.667	0.319	0.317	0.184	17	0.592	0.725	0.328	0.369	
18	0.555	0.633	0.284	0.121	0.147	18	0.572	0.701	0.320	0.252	
19	0.167	0.207	0.121	0.147		19	0.185	0.225	0.212	0.182	
c_n	0.914	0.986	1.037	1.013	0.895	c_n	0.969	1.047	1.094	1.081	0.955
c_m	-.1164	-.1164	-.1239	-.1051	-.1091	c_m	-.1247	-.1256	-.1350	-.1176	-.1203
C_N'	0.949		x'_{cp} = 26.4			C_N'	1.008		x'_{cp} = 26.7		
C_m'	-.1084		y'_{cp} = 43.1			C_m'	-.1183		y'_{cp} = 43.2		
C_b'	.409					C_b'	.436				

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TABLE X.- Continued.
 $[M \approx 0.96]$

(s) $M = 0.95$ $\alpha = 12.0^\circ$
 $c_{NA} = 0.91$ $\delta_{aL} = 0.6^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	2.228	2.265	2.335	2.336	1.968	1	2.272	2.288	2.327	2.316	1.981
2	1.883	2.118	2.022	2.107	1.822	2	1.946	2.153	2.069	2.126	1.855
3	1.746	1.975	1.888	1.999	1.545	3	1.830	2.026	1.922	2.023	1.587
4	1.703	1.897	1.763	1.906	1.243	4	1.729	1.946	1.827	1.937	1.257
5	1.506	1.605	1.518	1.726	1.136	5	1.553	1.647	1.752	1.752	1.191
6	1.326	1.550	1.511	1.429	0.992	6	1.374	1.580	1.552	1.478	1.024
7	1.243	1.441	1.441	1.408	0.970	7	1.269	1.493	1.485	1.447	0.982
8	1.200	1.225	1.504	1.438	0.786	8	1.232	1.254	1.450	1.477	0.823
9	1.184	1.154	1.353	1.272	0.713	9	1.202	1.201	1.388	1.309	0.754
10	1.007	1.115	1.326	1.275	0.554	10	1.051	1.128	1.336	1.290	0.585
11	0.954	1.025	1.245	1.199	0.566	11	0.971	1.061	1.272	1.221	0.585
12	0.769	0.915	1.001	1.015	0.510	12	0.829	0.894	1.062	1.049	0.526
13	0.670	0.703	0.906	0.849	0.590	13	0.675	0.743	0.963	0.907	0.636
14	0.762	0.740	0.705	0.737	0.576	14	0.790	0.725	0.711	0.759	0.630
15	0.618	0.517	0.473	0.535	0.516	15	0.630	0.572	0.538	0.571	0.574
16	0.628	0.597	0.500	0.417	0.417	16	0.662	0.596	0.571	0.480	
17	0.611	0.772	0.415	0.385	0.385	17	0.663	0.802	0.510	0.426	
18	0.501	0.744	0.448	0.272	0.272	18	0.649	0.768	0.505	0.350	
19	0.198	0.218	0.328	0.235	0.235	19	0.223	0.294	0.403	0.269	
c_n	1.028	1.123	1.162	1.137	1.017	c_n	1.069	1.146	1.194	1.173	1.050
c_m	-0.1293	-0.1403	-0.1472	-0.1256	-0.1309	c_m	-0.1415	-0.1428	-0.1579	-0.1365	-0.1394
c_b											
c_N'	1.072					x'_{cp}	37.0				
c_m'	-0.1286					y'_{cp}	42.1				
c_b'	.462										
						$c_N' = 1.102$	$x'_{cp} = 37.3$				
						$c_m' = -0.1357$	$y'_{cp} = 42.3$				
						$c_b' = .475$					

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TABLE X.—Concluded.

$$M \approx 0.96$$

$$\begin{aligned} \text{(u)} \quad M &= 0.96 \\ C_{NA} &= 1.03 \end{aligned}$$

$$\alpha = 13.6^\circ$$

$$(u) \quad C_N = 1.03$$

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Orifice	Row					C _N	C _m	C _b
	1	2	3	4	5			
1	2.315	2.325	2.371	2.360	2.032			
2	2.041	2.238	2.150	2.227	1.952			
3	1.927	2.088	2.016	2.091	1.681			
4	1.835	2.023	1.914	2.021	1.348			
5	1.673	1.742	1.644	1.847	1.284			
6	1.471	1.659	1.639	1.565	1.108			
7	1.353	1.543	1.551	1.544	1.039			
8	1.321	1.390	1.616	1.561	0.878			
9	1.285	1.294	1.458	1.390	0.821			
10	1.139	1.224	1.417	1.276	0.638			
11	1.017	1.136	1.106	1.026	0.633			
12	0.875	0.971	0.837	0.855	0.565			
13	0.723	0.760	0.774	0.765	0.672			
14	0.837	0.684	0.719	0.577	0.654			
15	0.609	0.465	0.569	0.397	0.488			
16	0.520	0.544	0.643	0.383				
17	0.476	0.722	0.614	0.447				
18	0.423	0.640	0.657	0.467				
19	0.201	0.269	0.526	0.436				
	c _n	1.102	1.185	1.231	1.160	1.113		
	c _m	-1.129	-1.163	-1.177	-1.152	-1.159		
	C _{N'}	= 1.129						
	C _{m'}	= -1.129						
	C _{b'}	= .485						
	x' _{cp}	= 26.2						
	y' _{cp}	= 43.0						

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TABLE XI
PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE DOUGLAS X-3 WING

$$(a) M = 1.00 \quad \alpha = 3.6^\circ \quad T_{\text{eq}} = 0.04 \quad \alpha = 3.5^\circ \quad T_{\text{eq}} = 0.2^\circ \text{ up}$$

Orifice	Row					Orifice	Row					
	1	2	3	4	5		1	2	3	4	5	
1	0.315	0.269	0.911	1.003	0.655	1	0.543	0.812	1.076	1.129	0.772	
2	•193	•268	•168	•285	•180	2	•344	•366	•763	•847	•694	
3	•182	•275	•120	•320	•050	3	•279	•341	•287	•682	•093	
4	•144	•221	•100	•313	•000	4	•240	•300	•180	•398	•046	
5	•093	•094	•049	•178	•048	5	•148	•199	•103	•200	•019	
6	•106	•076	•074	•006	•033	6	•161	•145	•122	•062	•014	
7	•112	•069	•120	-	•006	7	•148	•124	•162	•050	•058	
8	•062	•064	•241	•185	•024	8	•135	•152	•300	•259	•061	
9	•045	•082	•101	•029	-	9	•094	•119	•158	•062	•014	
10	•106	•130	•109	•096	•019	10	•169	•195	•187	•123	•066	
11	•064	•126	•178	•103	-	11	•108	•183	•247	•135	•014	
12	•097	•101	•081	•076	•015	12	•161	•196	•133	•136	•019	
13	•073	•029	•086	•096	-	13	•136	•053	•090	•134	•037	
14	•195	•174	•093	•137	-	14	•226	•191	•158	•183	•014	
15	•099	•057	•010	-	•049	-	•093	•126	•080	•000	- •010	
16	•118	•037	•014	-	•091	16	•159	•051	•019	-	•052	
17	•079	•090	•134	-	•038	17	•108	•094	•128	-	•023	
18	•083	•120	•132	-	•068	18	•119	•129	•145	-	•010	
19	-	•038	•048	•015	-	19	-	•088	•066	•034	-	•029
c_n	0.105	0.113	0.131	0.114	0.044	c_n	0.164	0.183	0.201	0.183	0.091	
c_m	- .0211	- .0181	- .0138	.0056	.0121	c_m	- .0282	- .0211	- .0170	- .0014	.0116	
c_b	$C_N' = 0.104$	$x'_{op} = 33.8$	$y'_{op} = 40.3$			$C_N' = 0.168$	$x'_{op} = 32.3$	$y'_{op} = 40.9$				
	$C_m' = -.0092$	$C_m' = -.0122$	$C_b' = .069$			$C_m' = -.0168$	$C_b' = .0122$					

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TABLE XI-- Continued.

 $[M \approx 0.99]$

(c) $M = 0.99$
 $c_{NA} = 0.20$
 $\alpha = 4.4^\circ$
 $\delta_{AL} = 0.2^\circ$ up

(d) $M = 0.99$
 $c_{NA} = 0.25$
 $\alpha = 5.0^\circ$
 $\delta_{AL} = 0.2^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.785	1.082	1.228	1.287	0.930	1	0.870	1.174	1.319	1.334	1.020
2	•533	•908	•947	1.001	•796	2	•640	1.030	1.028	1.130	•923
3	•470	•550	•784	•934	•527	3	•567	•894	•925	1.019	•632
4	•350	•392	•650	•757	•184	4	•491	•541	•741	•862	•294
5	•282	•266	•182	•697	•090	5	•355	•334	•315	•762	•251
6	•259	•239	•182	•167	•009	6	•338	•282	•279	•450	•198
7	•215	•192	•243	•222	•010	7	•275	•247	•273	•382	•033
8	•215	•214	•342	•284	•042	8	•257	•264	•371	•390	•103
9	•187	•195	•229	•114	•089	9	•260	•251	•262	•161	•070
10	•246	•299	•313	•189	•099	10	•314	•355	•410	•354	•085
11	•210	•276	•369	•260	•048	11	•273	•329	•430	•298	•019
12	•211	•309	•255	•196	•048	12	•247	•342	•274	•196	•010
13	•186	•086	•141	•105	-	13	•224	•129	•216	•143	-
14	•273	•229	•206	•187	•009	14	•305	•248	•210	•187	•019
15	•181	•160	•024	•000	-	15	•218	•197	•081	•010	-
16	•215	•101	•000	-	•052	16	•247	•133	•005	-	•047
17	•181	•146	•108	-	•009	17	•215	•183	•113	-	•005
18	•178	•152	•140	•000	-	18	•214	•171	•126	-	•029
19	-	•093	•066	•029	-	19	-	•069	•070	•034	-
c_A	0.245	0.277	0.305	0.265	0.179	c_A	0.304	0.330	0.352	0.337	0.234
c_B	-0.036	-0.0293	-0.0225	.0032	.0139	c_B	-0.057	-0.041	-0.0262	.0012	.0154

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.870	1.174	1.319	1.334	1.020	1	0.870	1.174	1.319	1.334	1.020
2	•640	1.030	1.028	1.130	•923	2	•640	1.030	1.028	1.130	•923
3	•567	•894	•925	1.019	•632	3	•567	•894	•925	1.019	•632
4	•491	•541	•741	•862	•294	4	•491	•541	•741	•862	•294
5	•355	•334	•315	•762	•251	5	•355	•334	•315	•762	•251
6	•338	•282	•279	•450	•198	6	•338	•282	•279	•450	•198
7	•275	•247	•247	•382	•033	7	•275	•247	•247	•382	•033
8	•257	•264	•371	•390	•103	8	•257	•264	•371	•390	•103
9	•260	•251	•262	•161	•070	9	•260	•251	•262	•161	•070
10	•314	•355	•410	•354	•085	10	•314	•355	•410	•354	•085
11	•273	•329	•430	•298	•019	11	•273	•329	•430	•298	•019
12	•247	•342	•342	•196	•010	12	•247	•342	•342	•196	•010
13	•224	•129	•216	•143	-	13	•224	•129	•216	•143	-
14	•305	•248	•210	•187	•019	14	•305	•248	•210	•187	•019
15	•218	•197	•081	•010	-	15	•218	•197	•081	•010	-
16	•247	•133	•005	-	•047	16	•247	•133	•005	-	•047
17	•215	•183	•113	-	•005	17	•215	•183	•113	-	•005
18	•214	•171	•126	-	•029	18	•214	•171	•126	-	•029
19	-	•069	•070	•034	-	19	-	•069	•070	•034	-
c_A'	0.255	0.305	0.330	0.352	0.337	c_A'	0.304	0.330	0.352	0.337	0.234
c_B'	-0.036	-0.0293	-0.0225	.0032	.0139	c_B'	-0.057	-0.041	-0.0262	.0012	.0154

$$\begin{aligned} CN' &= 0.311 \\ CM' &= -0.0208 \\ CB' &= .131 \end{aligned}$$

$$\begin{aligned} x'_{op} &= 31.6 \\ y'_{op} &= 41.5 \\ z'_{op} &= 42.1 \end{aligned}$$

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TABLE XI.—Continued.

$$[M \approx 0.99]$$

$$(e) \quad M = 0.99, \quad C_{N_A} = 0.31, \quad \alpha = 5.3^\circ, \quad \delta_{\alpha_L} = 0.2^\circ \text{ up}$$

Orifice	Row					$x^1_{cp} = 31.8$	$y^1_{cp} = 42.2$
	1	2	3	4	5		
1	1.101	1.312	1.432	1.453	1.101		
2	.730	1.178	1.118	1.210	.992		
3	.692	.989	1.021	1.106	.737		
4	.617	.948	.851	.997	.380		
5	.476	.450	.656	.869	.340		
6	.429	.364	.542	.527	.258		
7	.361	.340	.385	.558	.324		
8	.325	.328	.449	.619	.119		
9	.352	.368	.379	.288	.065		
10	.389	.405	.459	.446	.047		
11	.364	.419	.479	.341	-.005		
12	.279	.397	.306	.220	-.014		
13	.261	.174	.273	.164	-.036		
14	.328	.276	.250	.198	.005		
15	.251	.226	.131	.010	-.048		
16	.276	.167	.083	-.042			
17	.259	.268	.120	-.009			
18	.242	.229	.142	-.028			
19	-.041	.060	.014	-.071			
c_n	0.372	0.416	0.432	0.440	0.314		
c_m	-.0518	-.0404	-.0335	-.0023	.0082		
c_N^1	= 0.387						
c_m^1	= -.0262						
c_b^1	= .163						

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TABLE XI.- Continued.

$$(g) \quad M = 0.99 \quad \alpha = 6.5^\circ \\ C_{N_A} = 0.41 \quad \delta_{aL} = 0.3^\circ \text{ up} \\ (h) \quad M = 0.99 \quad \alpha = 6.8^\circ \\ C_{N_A} = 0.46 \quad \delta_{aL} = 0.3^\circ \text{ up}$$

Office	Row				
	1	2	3	4	5
1	1.544	1.582	1.655	1.700	1.344
2	1.073	1.422	1.396	1.446	1.198
3	0.946	1.288	1.242	1.363	0.938
4	0.883	1.144	1.113	1.246	0.614
5	0.709	0.831	0.899	1.107	0.501
6	0.633	0.615	0.869	0.744	0.455
7	0.563	0.538	0.811	0.787	0.468
8	0.521	0.516	0.831	0.822	0.384
9	0.529	0.544	0.598	0.678	0.302
10	0.522	0.577	0.591	0.742	0.229
11	0.511	0.501	0.608	0.672	0.232
12	0.384	0.484	0.397	0.336	0.175
13	0.338	0.302	0.349	0.259	0.082
14	0.422	0.339	0.372	0.240	0.094
15	0.307	0.288	0.206	0.043	-0.010
16	0.351	0.296	0.167	-0.014	
17	0.343	0.357	0.228	0.014	
18	0.315	0.367	0.221	0.014	
19	0.005	0.060	-0.014	-0.076	
c_n	0.528	0.574	0.610	0.587	0.501
c_m	-0.0663	-0.0605	-0.0530	-0.0218	-0.0308
c_N^t	0.550				
c_m^t	-0.065				
c_b^t	.236				
		$x^t c_p = 33.5$			
		$y^t c_p = 43.0$			

Orifice	Row					
	1	2	3	4	5	
1	1.418	1.515	1.590	1.623	1.269	
2	• 933	1.341	1.312	1.369	1.135	
3	• 341	1.213	1.166	1.269	• 875	
4	• 805	1.081	1.031	1.169	• 518	
5	• 647	• 677	• 832	1.033	• 458	
6	• 553	• 514	• 796	• 663	• 413	
7	• 508	• 452	• 724	• 694	• 406	
8	• 454	• 453	• 655	• 758	• 337	
9	• 460	• 496	• 513	• 602	• 278	
10	• 462	• 515	• 553	• 680	• 168	
11	• 466	• 469	• 537	• 466	• 137	
12	• 334	• 460	• 377	• 294	• 047	
13	• 529	• 255	• 316	• 216	- • 018	
14	• 385	• 320	• 358	• 221	- • 042	
15	• 298	• 259	• 150	• 029	- • 043	
16	• 323	• 272	• 176	- • 033		
17	• 523	• 320	• 181	• 000		
18	• 301	• 342	• 193	- • 009		
19	- • 018	• 051	- • 005	- • 071		
c_m'	0.474	0.521	0.553	0.529	0.438	
c_m''	- .0610	- .0551	- .0474	- .0140	- .0155	
x'_{cp}	• 0.496					
y'_{cp}	= - .0400					
c_b	.212					

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TABLE XI.- Continued.

 $[M \approx 0.99]$

$$(1) M = 0.99 \quad \alpha = 7.4^\circ \quad \delta_{\alpha_L} = 0.4^\circ \text{ up}$$

$$(1) C_NA = 0.52 \quad C_{NA} = 0.58$$

$$\alpha = 8.1^\circ \quad \delta_{\alpha_L} = 0.5^\circ \text{ up}$$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.660	1.704	1.752	1.797	1.415	1	1.756	1.766	1.811	1.843	1.479
2	1.240	1.519	1.477	1.525	1.304	2	1.330	1.608	1.556	1.621	1.380
3	1.072	1.390	1.338	1.441	1.045	3	1.166	1.485	1.390	1.524	1.103
4	.982	1.265	1.202	1.343	.703	4	1.074	1.336	1.297	1.421	.791
5	.820	1.043	.992	1.183	.577	5	.926	1.143	1.042	1.263	.640
6	.720	.716	.668	.856	.520	6	.789	.836	1.066	.919	.595
7	.675	.638	.888	.863	.541	7	.749	.719	.951	.932	.599
8	.608	.587	.931	.931	.413	8	.676	.663	1.029	.995	.455
9	.609	.630	.761	.770	.363	9	.678	.697	.905	.837	.392
10	.564	.639	.667	.824	.268	10	.606	.693	.747	.873	.296
11	.546	.551	.662	.774	.261	11	.605	.605	.710	.843	.286
12	.413	.514	.550	.550	.223	12	.454	.548	.511	.611	.261
13	.385	.370	.406	.335	.220	13	.411	.399	.454	.478	.262
14	.456	.369	.417	.260	.253	14	.508	.384	.452	.320	.292
15	.345	.326	.263	.091	.120	15	.392	.345	.325	.121	.217
16	.375	.328	.223	.023		16	.408	.366	.251	.066	
17	.383	.405	.266	.060		17	.398	.443	.295	.079	
18	.357	.415	.273	.019		18	.393	.439	.306	.043	
19	.028	.079	-.024	-.072		19	.055	.107	-.015	-.062	
c_n	0.590	0.643	0.683	0.670	0.579	c_m	0.646	0.698	0.751	0.730	0.634
c_m	.0721	.0678	.0652	.063	.0498	c_m	-.0800	-.0739	-.0756	-.0479	-.0604
						$C_N^I = 0.621$	$x_{op}^I = 24.1$	$x_{op}^I = 677$			
						$C_m^I = -0.0567$	$y_{op}^I = 43.3$	$C_m^I = -0.0649$			
						$C_b^I = .269$	$C_b^I = .293$	$y_{op}^I = 43.3$			

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TABLE XI.—Continued.

$$(k) \quad M = 0.98 \quad \alpha = 8.6^{\circ} \quad \delta_{a_T} = 0.5^{\circ} \text{ up}$$

$$(l) \quad M = 0.98 \quad C_{M_A} = 0.62 \quad \alpha = 9.1^{\circ} \quad \delta_{a_T} = 0.5^{\circ} \text{ up}$$

Orifice	Row				
	1	2	3	4	5

Office	Row				
	1	2	3	4	5
1	1.920	1.917	1.975	2.014	1.625
2	1.478	1.787	1.733	1.758	1.518
3	1.333	1.638	1.542	1.658	1.238
4	1.267	1.550	1.459	1.576	.924
5	1.088	1.291	1.186	1.398	.797
6	962	1.133	1.211	1.070	.715
7	853	879	1.110	1.089	.704
8	859	825	1.161	1.156	.542
9	817	818	1.038	.954	.478
10	707	779	.984	.995	.368
11	678	695	.821	.938	.372
12	526	623	.600	.724	.318
13	490	467	.541	.605	.341
14	554	471	.454	.504	.391
15	435	393	.378	.304	.308
16	466	431	.378	.162	
17	458	530	.351	.156	
18	445	508	.343	.043	
19	0.098	.166	.005	-.010	
c _n	0.753	0.819	0.877	0.854	0.744
c _m	-.0920	-.0878	-.0963	-.0707	-.0803
c _b					
			x' _{cp} = 35.2		
			y' _{cp} = 43.3		
			c _{n'} = 0.793		
			c _{m'} = -.0810		
			c _{b'} = .343		

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TABLE XI. - Continued.

 $[M \approx 0.99]$
 $(m) M = 0.99$
 $C_{NA} = 0.66$
 $\alpha = 9.4^\circ$
 $\delta_{aL} = 0.4^\circ$ up

 $(n) M = 0.99$
 $C_{NA} = 0.72$
 $\alpha = 10.0^\circ$
 $\delta_{aL} = 0.5^\circ$ up

Orifice	Row					Row					
	1	2	3	4	5						
1	1.893	1.901	1.946	1.954	1.611	1	1.961	1.989	2.027	2.053	1.688
2	1.649	1.732	1.673	1.735	1.475	2	1.547	1.829	1.766	1.808	1.533
3	1.307	1.617	1.554	1.637	1.202	3	1.432	1.719	1.651	1.709	1.284
4	1.243	1.519	1.519	1.412	1.563	4	1.334	1.603	1.501	1.623	1.981
5	1.098	1.266	1.170	1.383	1.764	5	1.214	1.360	1.256	1.470	1.872
6	0.909	1.113	1.170	1.056	0.711	6	1.024	1.257	1.232	1.136	1.748
7	0.875	0.871	1.095	1.075	0.687	7	0.978	1.011	1.213	1.149	0.777
8	0.826	0.818	1.134	1.116	0.538	8	0.917	0.904	1.214	1.180	0.584
9	0.812	0.807	1.023	0.927	0.481	9	0.900	0.878	1.100	1.022	0.540
10	0.712	0.784	0.979	0.981	0.354	10	0.771	0.855	1.083	1.062	0.380
11	0.691	0.705	0.815	0.934	0.387	11	0.753	0.775	0.938	0.988	0.432
12	0.527	0.618	0.604	0.716	0.325	12	0.576	0.655	0.669	0.776	0.346
13	0.466	0.451	0.533	0.600	0.355	13	0.519	0.516	0.602	0.660	0.394
14	0.568	0.479	0.539	0.525	0.373	14	0.600	0.529	0.581	0.574	0.427
15	0.425	0.379	0.392	0.325	0.319	15	0.483	0.418	0.456	0.399	0.370
16	0.464	0.412	0.360	0.210	-	16	0.500	0.451	0.422	0.314	-
17	0.471	0.527	0.338	0.175	-	17	0.508	0.581	0.369	0.232	-
18	0.443	0.510	0.344	0.071	-	18	0.464	0.551	0.319	0.104	-
19	0.128	0.128	0.143	0.024	- 0.005	19	0.142	0.181	0.058	0.043	-
c_n	0.746	0.809	0.863	0.848	0.733	c_n	0.811	0.880	0.933	0.918	0.800
c_m	-0.028	-0.0875	-0.0970	-0.0747	-0.0807	c_m	-1.011	-0.973	-1.085	-0.9888	-0.0926
						$C_N' = 0.851$	$x_{cp}' = 35.5$	$C_m' = -0.0923$	$y_{cp}' = 43.3$	$C_b' = .368$	

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TABLE XI.- Continued.

 $[M \approx 0.99]$

(o) $M = 0.98$
 $C_{NA} = 0.77$
 $\alpha = 10.4^\circ$
 $\delta_{aL} = 0.5^\circ$ up

(p) $M = 0.98$
 $C_{NA} = 0.81$
 $\alpha = 11.0^\circ$
 $\delta_{aL} = 0.5^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	2.016	2.030	2.082	2.077	1.711	1	2.071	2.089	2.131	2.157	1.795
2	1.620	1.902	1.803	1.869	1.611	2	1.693	1.950	1.852	1.911	1.632
3	1.503	1.767	1.693	1.739	1.343	3	1.567	1.833	1.758	1.798	1.375
4	1.422	1.669	1.548	1.697	1.038	4	1.514	1.710	1.595	1.750	1.095
5	1.291	1.389	1.295	1.498	0.903	5	1.354	1.471	1.369	1.579	0.970
6	1.082	1.323	1.289	1.213	0.805	6	1.156	1.362	1.351	1.245	0.842
7	1.029	1.131	1.242	1.177	0.793	7	1.072	1.261	1.323	1.258	0.836
8	0.980	1.969	1.266	1.246	0.618	8	1.035	1.013	1.328	1.291	0.663
9	0.961	0.933	1.141	1.081	0.579	9	1.021	0.995	1.205	1.111	0.601
10	0.818	0.895	1.123	1.079	0.428	10	0.855	0.943	1.176	1.137	0.440
11	0.780	0.835	1.020	1.044	0.452	11	0.808	0.862	1.107	1.074	0.479
12	0.618	0.713	0.736	0.824	0.385	12	0.649	0.760	0.797	0.866	0.406
13	0.541	0.536	0.650	0.700	0.446	13	0.582	0.578	0.696	0.732	0.472
14	0.630	0.578	0.626	0.608	0.452	14	0.657	0.624	0.678	0.631	0.487
15	0.484	0.448	0.490	0.425	0.385	15	0.529	0.455	0.531	0.427	0.416
16	0.529	0.475	0.466	0.372	0.162	16	0.551	0.515	0.478	0.412	
17	0.529	0.616	0.351	0.288	0.17	17	0.561	0.643	0.329	0.346	
18	0.493	0.572	0.283	0.162	0.086	18	0.523	0.608	0.294	0.211	
19	0.179	0.205	0.097	0.086		19	0.180	0.216	0.151	0.120	

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	2.016	2.030	2.082	2.077	1.711	1	2.071	2.089	2.131	2.157	1.795
2	1.620	1.902	1.803	1.869	1.611	2	1.693	1.950	1.852	1.911	1.632
3	1.503	1.767	1.693	1.739	1.343	3	1.567	1.833	1.758	1.798	1.375
4	1.422	1.669	1.548	1.697	1.038	4	1.514	1.710	1.595	1.750	1.095
5	1.291	1.389	1.295	1.498	0.903	5	1.354	1.471	1.369	1.579	0.970
6	1.082	1.323	1.289	1.213	0.805	6	1.156	1.362	1.351	1.245	0.842
7	1.029	1.131	1.242	1.177	0.793	7	1.072	1.261	1.323	1.258	0.836
8	0.980	1.969	1.266	1.246	0.618	8	1.035	1.013	1.328	1.291	0.663
9	0.961	0.933	1.141	1.081	0.579	9	1.021	0.995	1.205	1.111	0.601
10	0.818	0.895	1.123	1.079	0.428	10	0.855	0.943	1.176	1.137	0.440
11	0.780	0.835	1.020	1.044	0.452	11	0.808	0.862	1.107	1.074	0.479
12	0.618	0.713	0.736	0.824	0.385	12	0.649	0.760	0.797	0.866	0.406
13	0.541	0.536	0.650	0.700	0.446	13	0.582	0.578	0.696	0.732	0.472
14	0.630	0.578	0.626	0.608	0.452	14	0.657	0.624	0.678	0.631	0.487
15	0.484	0.448	0.490	0.425	0.385	15	0.529	0.455	0.531	0.427	0.416
16	0.529	0.475	0.466	0.372	0.162	16	0.551	0.515	0.478	0.412	
17	0.529	0.616	0.351	0.288	0.17	17	0.561	0.643	0.329	0.346	
18	0.493	0.572	0.283	0.162	0.086	18	0.523	0.608	0.294	0.211	
19	0.179	0.205	0.097	0.086		19	0.180	0.216	0.151	0.120	

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	2.016	2.030	2.082	2.077	1.711	1	2.071	2.089	2.131	2.157	1.795
2	1.620	1.902	1.803	1.869	1.611	2	1.693	1.950	1.852	1.911	1.632
3	1.503	1.767	1.693	1.739	1.343	3	1.567	1.833	1.758	1.798	1.375
4	1.422	1.669	1.548	1.697	1.038	4	1.514	1.710	1.595	1.750	1.095
5	1.291	1.389	1.295	1.498	0.903	5	1.354	1.471	1.369	1.579	0.970
6	1.082	1.323	1.289	1.213	0.805	6	1.156	1.362	1.351	1.245	0.842
7	1.029	1.131	1.242	1.177	0.793	7	1.072	1.261	1.323	1.258	0.836
8	0.980	1.969	1.266	1.246	0.618	8	1.035	1.013	1.328	1.291	0.663
9	0.961	0.933	1.141	1.081	0.579	9	1.021	0.995	1.205	1.111	0.601
10	0.818	0.895	1.123	1.079	0.428	10	0.855	0.943	1.176	1.137	0.440
11	0.780	0.835	1.020	1.044	0.452	11	0.808	0.862	1.107	1.074	0.479
12	0.618	0.713	0.736	0.824	0.385	12	0.649	0.760	0.797	0.866	0.406
13	0.541	0.536	0.650	0.700	0.446	13	0.582	0.578	0.696	0.732	0.472
14	0.630	0.578	0.626	0.608	0.452	14	0.657	0.624	0.678	0.631	0.487
15	0.484	0.448	0.490	0.425	0.385	15	0.529	0.455	0.531	0.427	0.416
16	0.529	0.475	0.466	0.372	0.162	16	0.551	0.515	0.478	0.412	
17	0.529	0.616	0.351	0.288	0.17	17	0.561	0.643	0.329	0.346	
18	0.493	0.572	0.283	0.162	0.086	18	0.523	0.608	0.294	0.211	
19	0.179	0.205	0.097	0.086		19	0.180	0.216	0.151	0.120	

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	2.016	2.030	2.082	2.077	1.711	1	2.071	2.089	2.131	2.157	1.795
2	1.620	1.902	1.803	1.869	1.611	2	1.693	1.950	1.852	1.911	1.632
3	1.503	1.767	1.693	1.739	1.343	3	1.567	1.833	1.758	1.798	1.375
4	1.422	1.669	1.548	1.697	1.038	4	1.514	1.710	1.595	1.750	1.095
5	1.291	1.389	1.295	1.498	0.903	5	1.354	1.471	1.369	1.579	0.970
6	1.082	1.323	1.289	1.213	0.805	6	1.156	1.362	1.351	1.245	0.842
7	1.029	1.131	1.242	1.177	0.793	7	1.072	1.261	1.323	1.258	0.836
8	0.980	1.969	1.266	1.246	0.618	8	1.035	1			

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TABLE XI.- Concluded.

 $[M \approx 0.99]$

(a) $M = 0.98$
 $c_{NA} = 0.86$
 $\alpha = 11.4^\circ$
 $\delta_{aL} = 0.6^\circ$ up

(r) $M = 0.98$
 $c_{NA} = 0.92$
 $\alpha = 12.3^\circ$
 $\delta_{aL} = 0.7^\circ$ up

Orifice	Row					Row				
	1	2	3	4	5	1	2	3	4	5
1	2.128	2.143	2.181	2.201	1.808	1	2.193	2.217	2.252	2.229
2	1.789	1.988	1.891	1.949	1.713	2	1.884	2.076	1.966	2.038
3	1.624	1.889	1.809	1.861	1.438	3	1.734	1.958	1.890	1.936
4	1.579	1.779	1.657	1.776	1.137	4	1.701	1.867	1.737	1.871
5	1.434	1.509	1.413	1.598	1.032	5	1.524	1.600	1.489	1.700
6	1.218	1.431	1.400	1.307	0.888	6	1.307	1.511	1.391	1.398
7	1.134	1.336	1.343	1.283	0.880	7	1.215	1.401	1.366	1.399
8	1.085	1.095	1.389	1.342	0.706	8	1.172	1.204	1.466	1.414
9	1.071	1.048	1.249	1.154	0.653	9	1.157	1.131	1.329	1.229
10	0.910	1.000	1.219	1.180	0.473	10	0.980	1.079	1.293	1.236
11	0.872	0.902	1.140	1.094	0.513	11	0.927	1.016	1.215	1.174
12	0.681	0.784	0.854	0.923	0.445	12	0.746	0.857	0.993	0.995
13	0.591	0.616	0.749	0.761	0.509	13	0.650	0.697	0.877	0.848
14	0.685	0.648	0.735	0.673	0.544	14	0.723	0.686	0.714	0.577
15	0.538	0.479	0.588	0.490	0.450	15	0.588	0.543	0.538	0.512
16	0.575	0.524	0.454	0.450	0.450	16	0.625	0.551	0.505	0.457
17	0.581	0.680	0.334	0.369	0.369	17	0.620	0.751	0.422	0.400
18	0.560	0.637	0.289	0.268	0.268	18	0.618	0.708	0.446	0.309
19	0.217	0.235	0.225	0.178	0.178	19	0.252	0.246	0.344	0.228
c_m	0.949	1.020	1.068	1.053	0.926	c_m	1.020	1.093	1.141	1.116
c_m	-0.1189	-0.1196	-0.1314	-0.1172	-0.1159	c_m	-0.1303	-0.1331	-0.1470	-0.1276
c_b	0.982	$x'_{cp} = 36.6$	$y'_{cp} = 43.2$			$c_w' = 1.050$	$x'_{cp} = 27.0$			
c_b	-0.1140					$c_m' = -0.1260$	$y'_{cp} = 43.1$			
c_b	.424					$c_b' = .452$				

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TABLE XII
PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE DOUGLAS X-3 WING

$[M \approx 1.01]$

(a) $M = 1.02$ $\alpha = 2.5^\circ$
 $c_{NA} = 0$ $\delta_{aL} = 0.1^\circ$ up

(b) $M = 1.02$ $\alpha = 2.4^\circ$
 $c_{NA} = 0.05$ $\delta_{aL} = 0.4^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.059	0.103	0.152	0.249	0.068	1	0.221	0.209	0.239	0.273	0.068
2	•0.050	•0.132	•0.076	•0.222	•0.101	2	•0.120	•0.234	•0.111	•0.276	•0.116
3	•0.073	•0.132	•0.005	•0.229	- •0.044	3	•0.156	•0.214	•0.083	•0.302	- •0.020
4	•0.031	- •0.093	- •0.015	- •0.174	- •0.025	4	•0.092	•0.142	•0.054	•0.273	- •0.007
5	•0.000	- •0.024	- •0.038	- •0.067	- •0.004	5	•0.053	•0.049	•0.019	•0.124	- •0.026
6	•0.010	- •0.005	- •0.024	- •0.088	- •0.022	6	•0.068	•0.049	•0.062	- •0.39	- •0.007
7	•0.010	- •0.005	- •0.020	- •0.054	- •0.011	7	•0.063	•0.049	•0.083	- •0.49	- •0.041
8	- •0.015	- •0.005	- •0.005	- •0.179	- •0.085	8	•0.039	•0.045	•0.197	- •144	- •0.011
9	- •0.031	- •0.004	- •0.011	- •0.034	- •0.030	9	•0.000	•0.037	•0.064	•0.000	- •0.007
10	•0.029	- •0.030	- •0.026	- •0.037	- •0.015	10	•0.079	•0.075	•0.059	•0.067	- •0.015
11	- •0.027	- •0.035	- •0.078	- •0.027	- •0.026	11	•0.015	•0.091	•0.131	•0.072	- •0.030
12	•0.051	- •0.004	- •0.041	- •0.007	- •0.015	12	•0.076	•0.056	•0.078	•0.044	- •0.000
13	- •0.010	- •0.004	- •0.011	- •0.015	- •0.091	13	•0.043	•0.030	•0.059	•0.049	- •0.091
14	•0.148	- •0.117	- •0.059	- •0.107	- •0.079	14	•0.166	•0.150	•0.093	•0.114	- •0.034
15	•0.059	- •0.041	- •0.011	- •0.057	- •0.088	15	•0.069	•0.055	•0.000	- •0.046	- •0.099
16	•0.092	- •0.025	- •0.015	- •0.105	- •0.105	16	•0.103	-	•0.004	•0.026	- •0.097
17	•0.027	- •0.067	- •0.111	- •0.077	- •0.067	17	•0.062	•0.096	•0.108	- •0.063	-
18	•0.061	- •0.086	- •0.129	- •0.079	- •0.079	18	- •0.079	•0.101	•0.151	- •0.106	-
19	- •0.040	- •0.019	- •0.035	- •0.023	- •0.035	19	- •0.040	•0.037	•0.058	- •0.023	-
c_n	0.031	0.033	0.045	0.026	-0.017	c_n	0.072	0.078	0.089	0.062	-0.000
c_m	-0.0137	-0.0072	-0.0114	.0082	.0104	c_m	-0.0174	-0.0128	-0.0180	.0052	.0072
c_b'	0.026	$x'_{cp} = 37.1$	$y'_{cp} = 32.8$			c_b'	0.064	$x'_{cp} = 36.1$			
	c_m'	-0.0032				c_m'	-0.0071				
	c_b'	.009				c_b'	.023				

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TABLE XII.- Continued.

 $[M \approx 1.01]$

(c) $M = 1.02$
 $C_{NA} = 0.10$
 $\alpha = 3.1^\circ$
 $\delta_{aL} = 0.9^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.512	0.551	0.977	1.076	0.728	1	0.697	0.980	1.116	1.215	0.829
2	•294	•324	•506	•804	•643	2	•432	•629	•846	•935	•762
3	•266	•334	•190	•417	•029	3	•367	•401	•667	•833	•485
4	•213	•249	•155	•351	-	4	•289	•312	•300	•681	-
5	•163	•155	•057	•223	-	5	•211	•189	•119	•351	-
6	•140	•123	•124	•015	•018	6	•207	•177	•161	•072	-
7	•125	•121	•122	•039	•052	7	•158	•169	•175	•145	•011
8	•106	•109	•282	•222	•055	8	•178	•168	•315	•276	•048
9	•065	•089	•138	•052	•026	9	•123	•149	•183	•093	•088
10	•139	•167	•161	•111	-	10	•207	•219	•245	•144	•000
11	•096	•164	•223	•132	-	11	•141	•230	•311	•158	-
12	•129	•145	•115	•106	-	12	•193	•208	•177	•150	-
13	•106	•056	•089	•108	-	13	•145	•086	•107	•119	-
14	•228	•172	•137	•073	-	14	•261	•171	•084	•115	-
15	•127	•070	•007	-	•088	15	•149	•140	•000	•061	-
16	•154	•036	•044	-	•137	16	•190	•065	•033	•126	-
17	•096	•107	•103	-	•066	17	•130	•129	•088	•048	-
18	•118	•130	•154	-	•101	18	•143	•141	•146	•075	-
19	-	•087	•066	-	•004	19	-	•094	•073	-	•015

Orifice	(d) $M = 1.02$ $C_{NA} = 0.16$					Orifice	$\alpha = 3.7^\circ$ $\delta_{aL} = 1.0^\circ$ up				
	1	2	3	4	5		1	2	3	4	5
1	0.697	0.980	1.116	1.215	0.829	1	0.846	0.935	0.762	0.935	0.829
2	•432	•629	•846	•935	•762	2	•367	•401	•667	•833	•485
3	•312	•300	•300	•300	•300	3	•289	•312	•681	•119	•018
4	•211	•189	•119	•022	•022	4	•211	•189	•351	•351	•022
5	•207	•177	•161	•036	•036	5	•207	•177	•072	•072	•036
6	•177	•158	•169	•175	•175	6	•177	•158	•145	•145	•011
7	•178	•168	•168	•276	•276	7	•178	•168	•315	•276	•048
8	•123	•149	•183	•093	•093	8	•123	•149	•183	•183	•093
9	•207	•219	•245	•144	•144	9	•207	•219	•245	•245	•144
10	•141	•230	•311	•158	•158	10	•141	•230	•311	•158	•158
11	•193	•208	•177	•022	•022	11	•193	•208	•177	•150	•022
12	•145	•145	•145	•115	•115	12	•145	•145	•107	•119	•105
13	•127	•137	•137	•073	•073	13	•127	•137	•126	•126	•073
14	•073	•078	•078	•078	•078	14	•073	•078	•084	•084	•052
15	•094	•094	•094	•094	•094	15	•094	•094	•000	•061	•087
16	•137	•137	•137	•137	•137	16	•137	•137	•065	•033	•126
17	•107	•103	•103	•103	•103	17	•107	•107	•129	•088	•048
18	•130	•154	•154	•154	•154	18	•130	•154	•141	•146	•075
19	-	•066	•065	•065	•065	19	-	•094	•073	-	•015

$$\begin{aligned} C_N' &= 0.136 \\ C_m' &= -0.0080 \\ C_b' &= .054 \end{aligned}$$

$$\begin{aligned} x'_{cp} &= 30.9 \\ y'_{cp} &= 39.5 \end{aligned}$$

$$\begin{aligned} C_N' &= 0.198 \\ C_m' &= -.0106 \\ C_b' &= .080 \end{aligned}$$

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TABLE XIII.- Continued.

 $[M \approx 1.01]$

(e) $M = 1.02$
 $C_{N_A} = 0.21$ $\alpha = 4.1^\circ$
 $\delta_{a_L} = 1.0^\circ$ up

(f) $M = 1.02$
 $C_{N_A} = 0.25$ $\alpha = 4.7^\circ$
 $\delta_{a_L} = 1.2^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.785	1.097	1.209	1.279	0.916	1	0.840	1.174	1.281	1.326	0.983
2	•537	•900	•946	1.009	•848	2	•609	1.016	1.027	1.116	•925
3	•460	•619	•794	•906	•554	3	•563	•857	•863	•969	•633
4	•375	•375	•640	•775	•206	4	•464	•519	•728	•870	•287
5	•288	•242	•185	•674	•100	5	•339	•313	•288	•760	•229
6	•265	•221	•200	•174	-	6	•326	•284	•279	•409	•183
7	•197	•216	•209	•213	•011	7	•244	•260	•238	•366	•045
8	•206	•197	•339	•316	•044	8	•253	•241	•366	•373	•095
9	•165	•182	•220	•111	•103	9	•222	•240	•249	•173	•081
10	•260	•271	•311	•215	•004	10	•298	•355	•382	•317	-
11	•195	•300	•367	•245	-	11	•270	•329	•399	•289	-
12	•222	•287	•229	•179	-	12	•246	•341	•272	•178	-
13	•172	-	•101	•170	•119	-	•098	•201	•123	•209	•130
14	•280	•217	•202	•099	-	14	•293	•245	•212	•091	-
15	•193	•165	•063	•057	-	15	•210	•201	•092	•068	-
16	•220	•101	•022	-	•115	16	•237	•129	•033	•114	-
17	•161	•154	•085	-	•073	17	•194	•220	•084	•069	-
18	•175	•168	•128	-	•075	18	•231	•189	•135	•093	-
19	-	•065	•092	•069	-	19	-	•047	•099	•053	-
c_n	0.248	0.271	0.303	0.252	0.168	c_n	0.291	0.327	0.345	0.306	0.209
c_m	-0.389	-0.091	-0.029	.0129	.0228	c_m	-0.451	-0.053	-0.0268	-.0134	.0267
c_b	0.249	0.249	$x'_{cp} = 30.6$	$y'_{cp} = 41.0$		c_N'	0.297	$x'_{cp} = 30.8$			
						c_m'	-.0174	$y'_{cp} = 41.2$			
						c_b'	.123				

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TABLE XIII.- Continued.
 $[M \approx 1.01]$

(g) $M = 1.02$ $\alpha = 5.1^\circ$
 $c_{NA} = 0.31$ $\delta_{BL} = 1.2^\circ$ up

(h) $M = 1.02$ $\alpha = 5.5^\circ$
 $c_{NA} = 0.34$ $\delta_{BL} = 1.1^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.076	1.279	1.372	1.407	1.088	1	1.178	1.344	1.434	1.475	1.126
2	.717	1.121	1.105	1.203	1.001	2	.781	1.174	1.155	1.256	1.039
3	.674	.953	.974	1.079	.715	3	.722	1.010	1.022	1.127	.749
4	.570	.921	.829	.987	.366	4	.636	.950	.877	1.026	.412
5	.430	.395	.614	.840	.317	5	.487	.472	.680	.882	.350
6	.427	.352	.482	.490	.269	6	.460	.382	.633	.538	.294
7	.344	.323	.354	.538	.306	7	.377	.366	.431	.591	.350
8	.315	.309	.423	.599	.124	8	.353	.338	.451	.643	.219
9	.279	.344	.331	.258	.081	9	.341	.395	.394	.420	.095
10	.390	.395	.440	.416	-.044	10	.404	.410	.458	.434	-.037
11	.338	.381	.446	.338	-.067	11	.372	.412	.476	.375	-.052
12	.285	.378	.305	.203	-.075	12	.299	.400	.316	.218	-.075
13	.237	.164	.253	.152	-.115	13	.260	.190	.275	.167	-.115
14	.326	.267	.273	.109	-.066	14	.340	.279	.307	.109	-.055
15	.242	.230	.126	-.042	-.083	15	.257	.238	.140	-.042	-.075
16	.269	.165	.095	-.125	16	.269	.190	.128	-.125	-.125	
17	.225	.252	.106	-.058	17	.240	.278	.106	-.047	-.047	
18	.241	.256	.145	-.075	18	.259	.282	.153	-.067	-.067	
19	-.025	.106	.053	-.060	19	-.014	.110	.057	-.049	-.049	
c_n	0.358	0.402	0.417	0.376	0.289	c_n	0.389	0.431	0.453	0.410	0.321
c_m	-.0508	-.0406	-.0341	.0086	.0181	c_m	-.0528	-.0445	-.0378	.0064	.0134
$c_N' = 0.368$						$x'_{cp} = 31.2$					
$c_m' = -.0229$						$y'_{cp} = 41.7$					
$c_b' = .153$						$x'_{cp} = 31.6$					
$c_m' = -.0262$						$y'_{cp} = 41.9$					
$c_b' = .167$											

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TABLE XII.- Continued.
 $[M \approx 1.01]$

(1) $M = 1.02$
 $C_{NA} = 0.40$
 $\alpha = 6.0^\circ$
 $\delta_{aL} = 1.1^\circ$ up

(J) $M = 1.02$
 $C_{NA} = 0.47$
 $\alpha = 6.6^\circ$
 $\delta_{aL} = 1.0^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.362	1.462	1.520	1.579	1.621	1	1.541	1.697	1.702	1.743	1.743
2	.884	1.289	1.259	1.333	1.119	2	1.064	1.433	1.491	1.275	1.275
3	.832	1.140	1.118	1.232	.845	3	.960	1.302	1.266	1.354	1.969
4	.736	1.022	1.002	1.114	.509	4	.870	1.176	1.128	1.262	1.607
5	.573	.607	.770	.952	.409	5	.704	.811	.899	1.075	1.497
6	.522	.464	.765	.648	.391	6	.646	.608	.884	.763	.472
7	.477	.443	.658	.682	.402	7	.554	.539	.790	.769	.487
8	.420	.407	.612	.726	.335	8	.519	.507	.839	.857	.381
9	.417	.458	.497	.564	.263	9	.492	.556	.605	.694	.329
10	.450	.484	.520	.632	.055	10	.537	.575	.586	.746	.154
11	.433	.453	.523	.424	.022	11	.500	.510	.601	.691	.195
12	.328	.418	.353	.272	-	12	.380	.476	.415	.330	.148
13	.299	.249	.301	.196	-	13	.334	.323	.353	.248	-.008
14	.395	.297	.358	.142	-	14	.455	.326	.403	.179	-.054
15	.300	.270	.174	-	.015	15	.317	.310	.236	.012	-.039
16	.306	.229	.164	-	.085	16	.361	.300	.198	-.046	
17	.281	.333	.165	-	.044	17	.310	.386	.242	-.011	
18	.294	.333	.171	-	.052	18	.337	.391	.232	-.035	
19	.025	.117	.046	-	.064	19	.041	.126	.004	-.063	
c_n	0.449	0.490	0.530	0.489	0.401	c_n	0.530	0.583	0.622	0.583	0.498
c_m	-.0602	-.0517	-.057	-.0041	-.0032	c_m	-.0690	-.0614	-.0569	-.0157	-.0241

$C_N' = 0.465$
 $C_m' = -.0551$
 $C_b' = .198$

$x'_{cp} = 32.5$
 $y'_{cp} = 42.5$

$C_N' = 0.554$
 $C_m' = -.0458$
 $C_b' = .237$

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TABLE XII.- Continued.

[$M \approx 1.0$]

(k) $M = 1.01$
 $C_{NA} = 0.54$
 $\alpha = 7.2^\circ$
 $\delta_{aL} = 1.0^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.676	1.702	1.771	1.813	1.445	1	1.748	1.775	1.812	1.859	1.495
2	1.219	1.547	1.480	1.576	1.357	2	1.318	1.608	1.564	1.627	1.392
3	1.080	1.415	1.358	1.467	1.044	3	1.161	1.486	1.404	1.508	1.095
4	•989	1.252	1.234	1.345	•696	4	1.042	1.298	1.300	1.402	•760
5	•790	1.021	•996	1.188	•560	5	•866	1.102	1.026	1.228	•606
6	•728	•701	•981	•846	•517	6	•778	•789	1.051	•912	•578
7	•629	•640	•868	•882	•542	7	•695	•696	•929	•922	•597
8	•619	•579	•941	•931	•434	8	•664	•641	1.001	•973	•457
9	•573	•635	•728	•785	•374	9	•641	•674	•853	•824	•397
10	•579	•639	•664	•822	•202	10	•609	•681	•713	•857	•225
11	•556	•559	•653	•780	•232	11	•584	•580	•680	•823	•228
12	•432	•519	•469	•505	•200	12	•462	•539	•504	•593	•224
13	•368	•377	•398	•320	•156	13	•399	•381	•445	•410	•182
14	•486	•364	•439	•192	•202	14	•501	•376	•453	•230	•241
15	•354	•347	•296	•056	•060	15	•377	•343	•327	•064	•171
16	•388	•329	•235	•043	-	16	•411	•355	•254	•004	-
17	•349	•412	•271	•015	-	17	•377	•447	•298	•027	-
18	•370	•426	•283	•016	-	18	•377	•441	•302	•012	-
19	•065	•131	•004	-	•071	19	•084	•162	•000	-	•083
c_n	0.595	0.645	0.693	0.655	0.570	c_n	0.633	0.684	0.738	0.701	0.613
c_m	-0.0753	-0.0693	-0.0675	-0.0265	-0.0422	c_m	-0.0791	-0.0726	-0.0735	-0.0362	-0.0509
c_b											
C_N'	0.611			x'_{cp}	23.6	C_N'	0.660		x'_{cp}	34.2	
C_m'		-0.0527		y'_{cp}	42.4	C_m'	-0.0605		y'_{cp}	43.1	
C_b'		.259				C_b'	.284				

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.748	1.775	1.812	1.859	1.495	1	1.748	1.775	1.812	1.859	1.495
2	1.318	1.608	1.564	1.627	1.392	2	1.318	1.608	1.564	1.627	1.392
3	1.161	1.486	1.404	1.508	1.095	3	1.161	1.486	1.404	1.508	1.095
4	1.042	1.298	1.300	1.402	•760	4	1.042	1.298	1.300	1.402	•760
5	•866	1.102	1.026	1.228	•606	5	•866	1.102	1.026	1.228	•606
6	•778	•789	1.051	•912	•578	6	•778	•789	1.051	•912	•578
7	•695	•696	•929	•922	•597	7	•695	•696	•929	•922	•597
8	•664	•641	1.001	•973	•457	8	•664	•641	1.001	•973	•457
9	•641	•674	•853	•824	•397	9	•641	•674	•853	•824	•397
10	•609	•681	•713	•857	•225	10	•609	•681	•713	•857	•225
11	•584	•580	•680	•823	•228	11	•584	•580	•680	•823	•228
12	•462	•539	•504	•593	•224	12	•462	•539	•504	•593	•224
13	•399	•381	•445	•410	•182	13	•399	•381	•445	•410	•182
14	•501	•376	•453	•230	•241	14	•501	•376	•453	•230	•241
15	•377	•343	•327	•064	•171	15	•377	•343	•327	•064	•171
16	•411	•355	•254	•004	-	16	•411	•355	•254	•004	-
17	•377	•447	•298	•027	-	17	•377	•447	•298	•027	-
18	•377	•441	•302	•012	-	18	•377	•441	•302	•012	-
19	•084	•162	•000	-	•083	19	•084	•162	•000	-	•083
c_n	0.633	0.684	0.738	0.701	0.613	c_n	0.633	0.684	0.738	0.701	0.613
c_m	-0.0791	-0.0726	-0.0735	-0.0362	-0.0509	c_m	-0.0791	-0.0726	-0.0735	-0.0362	-0.0509
C_N'	0.660					C_N'	0.660				
C_m'	-.0605					C_m'	-.0605				
C_b'	.284					C_b'	.284				
x'_{cp}	23.6					x'_{cp}	23.6				
y'_{cp}	42.4					y'_{cp}	42.4				

TABLE XIII.- Continued.

 $[M \approx 1.01]$

(m) $M = 1.01$
 $c_{N_A} = 0.62$
 $\alpha = 8.1^\circ$
 $\delta_{a_L} = 1.1^\circ$ up

(n) $M = 1.00$
 $c_{N_A} = 0.73$
 $\alpha = 9.3^\circ$
 $\delta_{a_L} = 1.1^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.856	1.839	1.885	1.931	1.560	1	1.997	2.004	2.046	2.073	1.687
2	1.379	1.694	1.621	1.693	1.461	2	1.529	1.853	1.774	1.844	1.607
3	1.230	1.556	1.464	1.573	1.152	3	1.385	1.730	1.627	1.716	1.302
4	1.123	1.388	1.364	1.473	0.814	4	1.295	1.588	1.505	1.623	0.975
5	0.952	1.170	1.087	1.300	0.680	5	1.144	1.330	1.223	1.428	0.821
6	0.854	0.887	1.117	0.983	0.635	6	1.000	1.199	1.244	1.136	0.756
7	0.754	0.756	1.012	0.989	0.640	7	0.899	0.959	1.161	1.121	0.737
8	0.734	0.707	0.707	1.041	0.494	8	0.899	0.845	1.204	1.182	0.581
9	0.690	0.733	0.957	0.887	0.435	9	0.844	0.877	1.089	1.010	0.525
10	0.650	0.729	0.799	0.921	0.254	10	0.755	0.834	1.043	1.043	0.328
11	0.616	0.632	0.731	0.888	0.281	11	0.719	0.741	0.872	0.984	0.356
12	0.499	0.573	0.530	0.651	0.253	12	0.583	0.654	0.645	0.754	0.299
13	0.429	0.430	0.479	0.527	0.218	13	0.489	0.510	0.569	0.639	0.320
14	0.535	0.406	0.492	0.286	0.278	14	0.603	0.509	0.591	0.475	0.367
15	0.414	0.368	0.361	0.108	0.212	15	0.476	0.426	0.435	0.336	0.303
16	0.436	0.372	0.302	0.023	0.16	16	0.487	0.441	0.410	0.217	
17	0.408	0.485	0.327	0.062	0.17	17	0.468	0.567	0.373	0.171	
18	0.417	0.475	0.324	0.032	0.18	18	0.470	0.543	0.350	0.064	
19	0.111	0.174	0.008	-0.072	0.19	19	0.127	0.188	0.045	-0.008	
c_n	0.684	0.736	0.794	0.760	0.662	c_n	0.792	0.862	0.921	0.891	0.773
c_m	-0.0857	-0.0788	-0.0825	-0.0667	-0.0599	c_m	-0.0994	-0.0945	-0.1054	-0.0755	-0.0793

TABLE XIII.- Concluded.
 $[\dot{M} \approx 1.0]$

(o) $M = 1.00$
 $C_{NA} = 0.75$
 $\alpha = 9.7^\circ$
 $Q_{a_L} = 1.1^\circ$ up

Orifice	Row				
	1	2	3	4	5
1	2.005	2.039	2.048	2.099	1.704
2	1.549	1.842	1.796	1.865	1.619
3	1.447	1.761	1.645	1.743	1.330
4	1.320	1.596	1.545	1.636	0.991
5	1.189	1.367	1.241	1.468	0.856
6	1.037	1.254	1.276	1.161	0.779
7	0.937	1.012	1.075	1.141	0.762
8	0.927	0.890	1.047	1.071	0.599
9	0.852	0.896	1.009	1.038	0.544
10	0.774	0.861	1.086	1.063	0.342
11	0.729	0.771	0.933	0.98	0.374
12	0.605	0.660	0.683	0.774	0.314
13	0.489	0.534	0.600	0.657	0.358
14	0.633	0.529	0.615	0.499	0.381
15	0.488	0.428	0.460	0.367	0.330
16	0.511	0.564	0.443	0.284	
17	0.482	0.586	0.360	0.215	
18	0.486	0.555	0.307	0.110	
19	0.141	0.197	0.068	0.020	
c_n	0.813	0.885	0.949	0.919	0.796
c_m	- .1035	- .0981	- .1100	- .0833	-.0850
c_b					
			$x'_{cp} = 25.7$		
			$y'_{cp} = 43.2$		

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TABLE XIII
PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE DOUGLAS X-3 WING

$$\begin{aligned} \text{(a) } & M = 1.10 & \alpha = 2.7^\circ & \delta_{\alpha_L} = 0.2^\circ \text{ up} \\ & c_N = 0.03 & & \\ \text{(b) } & M = 1.10 & \alpha = 2.7^\circ & \delta_{\alpha_L} = 0.4^\circ \text{ up} \\ & c_N = 0.05 & & \end{aligned}$$

$[M \approx 1.10]$

		Row					Row				
		Orifice					Orifice				
		1	2	3	4	5	1	2	3	4	5
Orifice											
1	0.244	0.144	0.649	0.648	0.125	1	0.306	0.199	0.768	0.817	0.456
2	•133	•196	•112	•215	•103	2	•188	•208	•159	•316	•190
3	•083	•171	•038	•255	- •080	3	•166	•208	•101	•275	- •084
4	•061	•168	•017	•268	- •044	4	•079	•184	•067	•255	- •050
5	•004	•042	- •020	•119	•000	5	•050	•062	•004	•159	- •003
6	•033	- •017	•045	- •050	- •006	6	•062	•051	•049	- •042	- •003
7	•033	- •038	•059	- •029	•013	7	•066	- •004	•075	•000	•013
8	•025	•017	•169	- •072	•000	8	•041	•034	•177	•093	•009
9	- •023	•006	•042	- •013	- •029	9	•013	•099	•061	- •003	- •019
10	•052	•048	- •003	•035	- •010	10	•071	•080	•025	•045	•000
11	•016	•069	•099	•036	- •049	11	•046	•105	•134	•055	- •036
12	•068	•093	•061	- •013	- •026	12	•099	•115	•076	•009	•019
13	•054	- •010	•041	•006	- •050	13	•071	•010	•057	•029	- •041
14	•162	•126	•118	•092	- •054	14	•183	•128	•127	•113	- •041
15	•044	•079	•026	- •013	- •075	15	•056	•092	•045	•007	- •065
16	•114	•009	•003	- •080	•012	16	•132	•012	•006	- •067	
17	•043	•079	•070	- •032	•070	17	•069	•089	•070	- •016	
18	•071	•074	•101	- •045	•076	18	•074	•080	•113	- •036	
19	- •053	•038	•076	- •007	•076	19	- •044	•044	•082	- •006	
c_h	0.059	0.063	0.080	0.053	- 0.015	c_h	0.083	0.085	0.102	0.076	0.010
c_m	- .0159	- .0115	- .0104	.0096	.0091	c_m	- .0194	- .0147	- .0122	.0078	.0114
C_N^I	0.052	$x_{cp}^I = 33.4$					C_N^I	0.075	$x_{cp}^I = 33.9$		
C_m^I	= -.0044	$y_{cp}^I = 35.1$					C_m^I	-.0066	$y_{cp}^I = 37.6$		
C_b^I	= .018	$C_b^I = .028$									

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TABLE XIII.- Continued.

(c) $M = 1.10$
 $C_{NA} = 0.09$
 $\alpha = 2.8^\circ$
 $\delta_{aL} = 0.2^\circ$ up

(d) $M = 1.10$
 $C_{NA} = 0.15$
 $\alpha = 3.3^\circ$
 $\delta_{aL} = 0.2^\circ$ up

Orifice Row

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.389	0.611	0.853	0.910	0.591	1	0.541	0.766	0.962	1.046	0.695
2	.268	.311	.532	.659	.546	2	.399	.582	.675	.790	.663
3	.232	.257	.205	.544	.054	3	.347	.442	.536	.711	.377
4	.161	.217	.129	.334	-	4	.264	.308	.434	.598	.031
5	.107	.087	.041	.183	-	5	.197	.153	.118	.494	.013
6	.107	.084	.090	-	.012	6	.189	.176	.134	.078	-.015
7	.066	.062	.096	.017	.006	7	.143	.141	.154	.066	-.006
8	.062	.055	.205	.157	.009	8	.115	.118	.253	.223	.003
9	.073	.064	.096	.035	-	9	.125	.136	.140	.076	-.016
10	.116	.121	.060	.067	.016	10	.173	.181	.150	.129	.019
11	.098	.143	.159	.065	-	11	.156	.184	.241	.100	-.010
12	.104	.166	.133	.019	-	12	.168	.251	.193	.059	.003
13	.082	.026	.085	.032	-	13	.116	.080	.151	.073	-.019
14	.205	.150	.144	.138	-	14	.232	.169	.179	.147	-.022
15	.093	.110	.054	.020	-	15	.137	.138	.095	.032	-.019
16	.157	.031	.013	-	.038	16	.187	.071	.078	-.044	
17	.095	.104	.066	-	.006	17	.137	.144	.066	.006	
18	.110	.093	.106	-	.016	18	.143	.121	.112	-.006	
19	-	.022	.044	.085	-.010	19	-	.009	.082	.078	.006
c_n	0.121	0.127	0.144	0.120	0.045	c_n	0.181	0.196	0.221	0.187	0.103
c_m	.0244	.0164	.0136	.0073	.0147	c_m	-.0314	-.0232	-.0269	.0071	.0184
c_b											
	$C_N' = 0.114$		$x'_{cp} = 31.9$				$C_N' = 0.180$				
	$C_m' = -0.079$		$y'_{cp} = 39.4$				$C_m' = -0.0123$				
	$C_b' = .045$						$C_b' = .073$				
							$x'_{cp} = 31.8$				
							$y'_{cp} = 40.7$				

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TABLE XIII.- Continued.
 $[M \approx 1.10]$

(e) $M = 1.10$ $\alpha = 4.1^\circ$
 $C_{NA} = 0.20$ $\delta_{aL} = 0.2^\circ$ up

(f) $M = 1.10$ $\alpha = 4.5^\circ$
 $C_{NA} = 0.24$ $\delta_{aL} = 0.4^\circ$ up

Orifice	Row					Row					
	1	2	3	4	5						
1	0.694	0.875	1.027	1.119	0.781	1	0.802	0.973	1.091	1.188	0.862
2	•487	•701	•785	•893	•731	2	•552	•812	•849	•943	•776
3	•449	•676	•623	•764	•460	3	•501	•734	•723	•850	•494
4	•355	•416	•533	•673	•160	4	•430	•591	•608	•737	•232
5	•241	•227	•215	•578	•142	5	•301	•304	•383	•660	•198
6	•247	•214	•207	•247	•068	6	•290	•254	•302	•320	•144
7	•205	•198	•195	•144	•029	7	•248	•255	•240	•295	•127
8	•164	•164	•309	•307	•016	8	•212	•213	•348	•431	•043
9	•174	•168	•185	•142	-	9	•212	•205	•219	•157	•000
10	•213	•225	•215	•170	•025	10	•251	•280	•258	•226	•031
11	•215	•246	•291	•148	-	11	•259	•284	•346	•189	•000
12	•195	•311	•233	•106	•019	12	•225	•335	•264	•152	•022
13	•152	•134	•186	•111	-	13	•185	•168	•222	•152	-
14	•266	•197	•234	•169	•013	14	•293	•215	•268	•171	•019
15	•173	•160	•101	•039	-	15	•188	•178	•129	•042	-
16	•212	•098	•131	-	•038	16	•230	•131	•137	-	•035
17	•166	•182	•085	•006	-	17	•185	•206	•138	•000	
18	•164	•168	•121	-	•003	18	•197	•199	•130	-	•003
19	•015	•094	•068	•000	-	19	•018	•128	•081	-	•003
c_n	0.228	0.249	0.275	0.243	0.152	c_m	0.269	0.300	0.319	0.288	0.198
c_m	-0.367	-0.303	-0.0281	.0037	.0173	c_m	-0.416	-0.347	-0.330	.0006	.0121
						$C_N' = 0.230$	$x'_{cp} = 32.6$	$x'_{cp} = 32.8$			
						$C_m' = -0.0176$	$y'_{cp} = 41.3$	$y'_{cp} = 41.5$			
						$C_b' = .095$					

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TABLE XIII. - Continued.

 $[M \approx 1.10]$

(g) $M = 1.10$
 $c_{N_A} = 0.31$
 $\alpha = 5.2^\circ$
 $\delta_{aL} = 0.4^\circ$ up

(h) $M = 1.10$
 $c_{N_A} = 0.34$
 $\alpha = 5.5^\circ$
 $\delta_{aL} = 0.5^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.041	1.117	1.234	1.277	0.960	1	1.131	1.187	1.291	1.350	1.028
2	.670	.996	.971	1.087	.906	2	.710	1.065	1.034	1.131	.961
3	.615	.836	.871	.969	.659	3	.666	.880	.915	1.041	.693
4	.546	.834	.727	.891	.351	4	.608	.903	.790	.944	.395
5	.407	.419	.564	.756	.277	5	.461	.498	.614	.806	.328
6	.400	.358	.539	.446	.217	6	.442	.422	.605	.484	.248
7	.321	.324	.437	.467	.219	7	.355	.370	.513	.526	.255
8	.309	.297	.445	.569	.202	8	.363	.335	.511	.604	.265
9	.274	.268	.285	.339	.147	9	.307	.303	.336	.381	.238
10	.335	.375	.366	.326	.075	10	.363	.420	.423	.440	.123
11	.343	.369	.434	.326	.038	11	.389	.408	.479	.436	.099
12	.291	.376	.326	.238	.029	12	.311	.396	.374	.251	.045
13	.238	.251	.275	.205	.003	13	.264	.280	.313	.219	-.012
14	.327	.231	.317	.192	.047	14	.359	.251	.329	.205	.047
15	.206	.215	.183	.068	-	15	.238	.222	.205	.065	-.013
16	.270	.186	.171	-	.013	16	.283	.214	.172	-.003	
17	.224	.252	.191	-	.022	17	.257	.281	.207	.040	
18	.227	.252	.198	-	.019	18	.248	.278	.220	.022	
19	.068	.184	.091	-	.016	19	.083	.206	.094	-.019	
c_a	0.345	0.385	0.411	0.378	0.291	c_a	0.381	0.425	0.454	0.418	0.334
c_m	-.0497	-.0433	-.0448	-.0392	-.0011	c_m	-.0544	-.0479	-.0502	-.0142	-.0094
c_b	0.360	$x'_{op} = 33.6$	$y'_{op} = 42.2$			c_N'	0.399				
						c_m'	-.0360				
						c_b'	.169				

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TABLE XIII.- Continued.

$$\left[M \approx 1.10 \right]$$

(1) $M = 1.10$
 $c_{NA} = 0.42$
 $\delta_a^a = 6.2^\circ$ up
 $\delta_{aL} = 0.6^\circ$ up

(1) $M = 1.10$
 $c_{NA} = 0.45$
 $\delta_a^a = 6.6^\circ$
 $\delta_{aL} = 0.6^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.266	1.324	1.402	1.452	1.133	1	1.350	1.380	1.452	1.507	1.183
2	.809	1.182	1.138	1.251	1.045	2	.873	1.237	1.199	1.285	1.098
3	.770	1.022	1.037	1.147	.786	3	.808	1.109	1.083	1.197	.836
4	.708	.988	.908	1.047	.485	4	.756	1.018	.958	1.089	.528
5	.601	.668	.724	.901	.404	5	.675	.776	.769	.946	.442
6	.530	.532	.700	.580	.341	6	.563	.570	.761	.642	.378
7	.470	.450	.630	.621	.345	7	.540	.491	.672	.663	.412
8	.446	.412	.671	.689	.334	8	.475	.433	.732	.744	.346
9	.383	.386	.429	.458	.288	9	.446	.484	.544	.531	.310
10	.458	.516	.514	.627	.167	10	.480	.457	.561	.662	.180
11	.458	.472	.540	.601	.185	11	.481	.493	.569	.627	.189
12	.372	.447	.409	.339	.163	12	.394	.454	.429	.420	.179
13	.290	.331	.352	.254	.093	13	.318	.325	.380	.292	.133
14	.395	.283	.359	.221	.117	14	.407	.315	.383	.225	.174
15	.266	.257	.256	.094	.013	15	.291	.260	.279	.100	.084
16	.327	.242	.203	.013	.013	16	.334	.261	.225	.025	
17	.287	.313	.229	.065	.065	17	.303	.335	.239	.072	
18	.285	.320	.255	.045	.045	18	.289	.340	.265	.058	
19	.117	.238	.117	-.026	-.026	19	.142	.247	.124	-.029	
c_A	0.453	0.497	0.531	0.500	0.416	c_A	0.484	0.529	0.572	0.539	0.457
c_B	-0.0635	-0.0563	-0.0588	-0.0254	-0.0267	c_B	-0.0659	-0.0597	-0.0642	-0.0308	-0.0348
$c_{N'}^1$	0.473	x'_{cp} = 34.6	y'_{cp} = 42.7			$c_{N'}^1$	0.507	x'_{cp} = 34.9	y'_{cp} = 42.9		
$c_{m'}^1$	-.0456					$c_{m'}^1$	-.0500				
$c_{b'}^1$.202					$c_{b'}^1$.218				

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.402	1.324	1.138	1.251	1.045	1	1.350	1.380	1.452	1.507	1.183
2	.809	1.182	1.045	1.147	.786	2	.873	1.237	1.199	1.285	1.098
3	.770	1.022	1.037	1.147	.786	3	.808	1.109	1.083	1.197	.836
4	.708	.988	.908	1.047	.485	4	.756	1.018	.958	1.089	.528
5	.601	.668	.724	.901	.404	5	.675	.776	.769	.946	.442
6	.530	.532	.700	.580	.341	6	.563	.570	.761	.642	.378
7	.470	.450	.630	.621	.345	7	.540	.491	.672	.663	.412
8	.446	.412	.671	.689	.334	8	.475	.433	.732	.744	.346
9	.383	.386	.429	.458	.288	9	.446	.484	.544	.531	.310
10	.458	.516	.514	.627	.167	10	.480	.457	.561	.662	.180
11	.458	.472	.540	.601	.185	11	.481	.493	.569	.627	.189
12	.372	.447	.409	.339	.163	12	.394	.454	.429	.420	.179
13	.290	.331	.352	.254	.093	13	.318	.325	.380	.292	.133
14	.395	.283	.359	.221	.117	14	.407	.315	.383	.225	.174
15	.266	.257	.256	.094	.013	15	.291	.260	.279	.100	.084
16	.327	.242	.203	.013	.013	16	.334	.261	.225	.025	
17	.287	.313	.229	.065	.065	17	.303	.335	.239	.072	
18	.285	.320	.255	.045	.045	18	.289	.340	.265	.058	
19	.117	.238	.117	-.026	-.026	19	.142	.247	.124	-.029	
c_A	0.453	0.497	0.531	0.500	0.416	c_A	0.484	0.529	0.572	0.539	0.457
c_B	-0.0635	-0.0563	-0.0588	-0.0254	-0.0267	c_B	-0.0659	-0.0597	-0.0642	-0.0308	-0.0348
$c_{N'}^1$	0.473	x'_{cp} = 34.6	y'_{cp} = 42.7			$c_{N'}^1$	0.507	x'_{cp} = 34.9	y'_{cp} = 42.9		
$c_{m'}^1$	-.0456					$c_{m'}^1$	-.0500				
$c_{b'}^1$.202					$c_{b'}^1$.218				

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TABLE XIII.-- Continued.
 $[M \approx 1.10]$

(k) $M = 1.10$ $\alpha = 7.6^\circ$
 $c_{NA} = 0.50$ $\delta_{aL} = 0.6^\circ$ up

Orifice	Row				
	1	2	3	4	5
1	1.474	1.484	1.549	1.601	1.285
2	1.056	1.349	1.313	1.374	1.164
3	0.947	1.252	1.205	1.295	0.900
4	0.904	1.099	1.071	1.199	0.627
5	0.785	0.936	0.876	1.061	0.528
6	0.687	0.714	0.868	0.739	0.476
7	0.638	0.614	0.783	0.769	0.494
8	0.587	0.556	0.835	0.815	0.403
9	0.575	0.604	0.731	0.687	0.357
10	0.551	0.610	0.675	0.727	0.240
11	0.544	0.578	0.645	0.719	0.249
12	0.454	0.521	0.485	0.539	0.223
13	0.364	0.383	0.426	0.453	0.196
14	0.456	0.414	0.450	0.336	0.230
15	0.343	0.286	0.305	0.183	0.192
16	0.358	0.299	0.286	0.075	0.16
17	0.351	0.398	0.268	0.134	0.17
18	0.340	0.384	0.290	0.102	0.18
19	0.168	0.286	0.137	- .007	0.19

Orifice	Row				
	1	2	3	4	5
1	1.565	1.570	1.627	1.678	1.362
2	1.165	1.451	1.460	1.241	
3	1.041	1.333	1.373	0.981	
4	0.989	1.173	1.269	0.703	
5	0.874	1.013	1.128	0.577	
6	0.759	0.826	0.956	0.837	
7	0.693	0.682	0.869	0.850	0.547
8	0.659	0.630	0.919	0.898	0.455
9	0.646	0.666	0.810	0.752	0.377
10	0.605	0.669	0.781	0.793	0.282
11	0.591	0.637	0.704	0.773	0.276
12	0.511	0.557	0.527	0.607	0.242
13	0.399	0.412	0.471	0.502	0.241
14	0.483	0.461	0.480	0.416	0.263
15	0.381	0.309	0.354	0.243	0.219
16	0.381	0.331	0.328	0.130	
17	0.378	0.441	0.313	0.160	
18	0.368	0.404	0.319	0.122	
19	0.178	0.306	0.130	- .013	

Orifice	Row				
	1	2	3	4	5
c _a	0.568	0.614	0.658	0.630	0.531
c _m	- .0751	- .0721	- .0768	- .0497	- .0501
c _b	0.590	x'cp = 25.7	y'cp = 42.9		
c _a	-.0628				
c _m	.253				

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TABLE XIII.- Continued.

 $[M \approx 1.10]$

(m) $M = 1.10$ $\alpha = 9.1^\circ$
 $c_{N_A} = 0.61$ $\delta_{BL} = 0.7^\circ$ up

 $c_{N_A} = 1.09$ $\alpha = 9.7^\circ$
 $c_{BL} = 0.66$ $\delta_{BL} = 0.8^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.647	1.652	1.700	1.742	1.438	1	1.728	1.745	1.815	1.497	
2	1.227	1.515	1.472	1.534	1.308	2	1.335	1.604	1.550	1.602	1.388
3	1.122	1.410	1.351	1.445	1.041	3	1.218	1.511	1.449	1.530	1.125
4	1.021	1.263	1.238	1.348	0.770	4	1.108	1.386	1.313	1.425	0.835
5	0.933	1.085	0.998	1.204	0.649	5	1.036	1.177	1.084	1.269	0.732
6	0.814	0.951	1.014	0.905	0.590	6	0.897	1.062	1.084	0.992	0.658
7	0.756	0.763	0.950	0.905	0.603	7	0.830	0.867	1.038	0.992	0.664
8	0.718	0.690	0.982	0.955	0.471	8	0.813	0.766	1.043	1.039	0.521
9	0.714	0.718	0.879	0.817	0.422	9	0.790	0.785	0.960	0.891	0.462
10	0.649	0.712	0.871	0.851	0.299	10	0.710	0.763	0.940	0.915	0.335
11	0.625	0.670	0.753	0.816	0.306	11	0.673	0.718	0.839	0.871	0.339
12	0.542	0.587	0.570	0.649	0.256	12	0.575	0.634	0.630	0.702	0.292
13	0.420	0.432	0.516	0.551	0.276	13	0.459	0.473	0.566	0.589	0.302
14	0.512	0.484	0.507	0.455	0.282	14	0.545	0.527	0.566	0.488	0.332
15	0.407	0.328	0.400	0.313	0.262	15	0.440	0.368	0.443	0.354	0.290
16	0.407	0.356	0.363	0.201	0.201	16	0.433	0.386	0.415	0.267	
17	0.409	0.460	0.352	0.205	0.17	17	0.437	0.513	0.385	0.315	
18	0.396	0.453	0.336	0.164	0.18	18	0.432	0.500	0.375	0.217	
19	0.181	0.318	0.110	0.010	0.19	19	0.200	0.310	0.111	0.043	
c_m	0.663	0.722	0.775	0.751	0.632	c_m	0.722	0.785	0.838	0.814	0.690
c_m	-0.0882	-0.0846	-0.0949	-0.0717	-.0653	c_m	-0.0953	-.0926	-.1066	-.0833	-.0742
$c_{N_A}^i$	0.696	$x_{op}^i = 36.2$				$c_{N_A}^i = 0.756$	$x_{op}^i = 36.5$				
c_{BL}^i	-0.0780	$y_{op}^i = 43.1$				$c_{BL}^i = -0.0867$	$y_{op}^i = 43.1$				
c_B^i	.300					$c_B^i = .326$					

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TABLE XIII.- Continued.
 $[M \approx 1.10]$

$$(o) \begin{array}{l} M = 1.09 \\ C_{N_A} = 0.70 \end{array} \quad \begin{array}{l} \alpha = 10.1^\circ \\ \delta_{aL} = 0.9^\circ \text{ up} \end{array}$$

$$(p) \begin{array}{l} M = 1.08 \\ C_{N_A} = 0.74 \end{array} \quad \begin{array}{l} \alpha = 10.6^\circ \\ \delta_{aL} = 0.9^\circ \text{ up} \end{array}$$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.796	1.810	1.849	1.870	1.559	1	1.854	1.870	1.899	1.950	1.624
2	1.402	1.671	1.628	1.653	1.428	2	1.507	1.741	1.687	1.728	1.500
3	1.309	1.569	1.511	1.584	1.177	3	1.385	1.638	1.645	1.645	1.236
4	1.185	1.461	1.379	1.488	.896	4	1.264	1.539	1.443	1.549	.950
5	1.113	1.230	1.126	1.329	.771	5	1.188	1.302	1.192	1.383	.845
6	952	1.136	1.139	1.043	.696	6	1.030	1.212	1.209	1.114	.755
7	884	952	1.090	1.039	.710	7	.945	1.074	1.153	1.093	.741
8	859	839	1.107	1.079	.571	8	.924	.896	1.173	1.142	.597
9	831	831	.997	.938	.496	9	.897	.883	1.059	.996	.519
10	748	799	.996	.965	.353	10	.797	.863	1.051	1.017	.388
11	703	770	.925	.912	.354	11	.741	.794	.986	.957	.383
12	600	666	.662	.750	.320	12	.642	.707	.721	.787	.332
13	487	501	.601	.624	.345	13	.513	.531	.641	.661	.370
14	570	550	.592	.516	.363	14	.593	.583	.654	.546	.391
15	461	382	.465	.376	.304	15	.480	.404	.501	.395	.353
16	458	410	.459	.304		16	.483	.444	.504	.349	
17	469	535	.416	.387		17	.485	.567	.415	.432	
18	459	522	.383	.285		18	.487	.551	.359	.316	
19	224	318	.115	.070		19	.251	.319	.136	.127	
c_n	0.762	0.830	0.883	0.860	0.731	c_m	0.812	0.880	0.934	0.910	0.775
c_m	-1.003	-0.977	-1.139	-.0928	-.0811	c_b	-1.060	-.1046	-1.222	-.1008	-.0872
C_{N^1}	0.799	$x^1_{cp} = 36.6$				C_{N^1}	0.847	$x^1_{cp} = 36.8$			
C_{n^1}	-0.0929	$y^1_{cp} = 43.1$				C_{m^1}	-.0995				
C_{b^1}	.344					C_{b^1}	.365				

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TABLE XIII.- Continued.

 $[M \approx 1.10]$

(q) $M = 1.08$
 $c_{NA} = 0.79$

$\alpha = 11.4^\circ$
 $\delta_{aL} = 1.0^\circ$ up

(r) $M = 1.08$
 $c_{NA} = 0.85$

$\alpha = 12.2^\circ$
 $\delta_{aL} = 1.0^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.918	1.944	1.979	2.014	2.049	1	1.990	2.030	2.056	2.069	2.074
2	1.605	1.821	1.759	1.777	1.560	2	1.612	1.887	1.823	1.853	1.624
3	1.480	1.709	1.651	1.715	1.308	3	1.609	1.796	1.716	1.781	1.371
4	1.375	1.613	1.526	1.616	1.013	4	1.477	1.692	1.577	1.695	1.080
5	1.255	1.379	1.258	1.447	.926	5	1.355	1.446	1.341	1.531	1.010
6	1.105	1.281	1.280	1.198	.801	6	1.157	1.366	1.345	1.281	.862
7	1.015	1.214	1.212	1.160	.802	7	1.083	1.294	1.292	1.230	.852
8	.989	.972	1.256	1.211	.644	8	1.062	1.055	1.318	1.278	.691
9	.958	.951	1.129	1.055	.584	9	1.034	1.025	1.198	1.136	.648
10	.846	.911	1.097	1.069	.417	10	.913	.975	1.168	1.127	.477
11	.790	.860	1.038	1.007	.432	11	.834	.924	1.113	1.069	.473
12	.694	.744	.815	.850	.378	12	.728	.800	.914	.922	.407
13	.543	.578	.711	.722	.424	13	.583	.619	.783	.751	.473
14	.627	.603	.694	.575	.453	14	.665	.655	.761	.619	.500
15	.509	.456	.560	.455	.396	15	.549	.483	.615	.465	.437
16	.532	.466	.530	.374	.374	16	.563	.515	.538	.417	
17	.512	.610	.411	.467	.467	17	.557	.654	.385	.500	
18	.522	.591	.349	.348	.348	18	.554	.636	.355	.408	
19	.272	.335	.184	.185	.185	19	.303	.350	.244	.231	
c_A	0.868	0.935	0.992	0.965	0.835	c_A	0.925	0.997	1.052	1.026	0.893
c_B	-1.140	-1.123	-1.311	-1.102	-0.996	c_B	-1.218	-1.228	-1.422	-1.209	-.1105
c_{N^1}	0.901		$x'_{op} = 37.0$			$c_{N^1} = 0.959$		$x'_{op} = 37.3$			
c_{aL^1}	-.1078		$y'_{op} = 43.1$			$c_{aL^1} = -.1176$		$y'_{op} = 43.1$			
c_{b^1}	.388					$c_{b^1} = .413$					

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TABLE XIII.- Continued.

 $[M \approx 1.10]$

(S) $M = 1.07$ $c_{N_A} = 0.90$ $\alpha = 13.0^\circ$
 $\delta_{aL} = 1.0^\circ$ up

(t) $M = 1.06$ $c_{N_A} = 0.95$ $\alpha = 13.8^\circ$
 $\delta_{aL} = 1.1^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	2.072	2.084	2.117	2.112	1.808	1	2.128	2.173	2.146	1.856	
2	1.788	1.951	1.864	1.917	1.706	2	1.878	2.036	1.955	2.007	1.757
3	1.692	1.859	1.792	1.861	1.438	3	1.761	1.934	1.840	1.914	1.509
4	1.580	1.771	1.646	1.762	1.153	4	1.687	1.837	1.741	1.837	1.200
5	1.452	1.536	1.419	1.598	1.088	5	1.544	1.607	1.519	1.674	1.172
6	1.257	1.430	1.402	1.360	0.930	6	1.347	1.510	1.484	1.439	0.998
7	1.160	1.364	1.376	1.304	0.902	7	1.244	1.438	1.432	1.381	0.964
8	1.134	1.151	1.383	1.354	0.752	8	1.205	1.246	1.448	1.420	0.798
9	1.111	1.096	1.262	1.189	0.685	9	1.185	1.178	1.325	1.264	0.751
10	0.971	1.039	1.233	1.179	0.515	10	1.035	1.096	1.291	1.230	0.559
11	0.898	0.984	1.158	1.114	0.498	11	0.926	1.050	1.220	1.173	0.545
12	0.775	0.852	0.981	0.975	0.453	12	0.820	0.907	1.040	1.027	0.472
13	0.625	0.683	0.888	0.816	0.504	13	0.657	0.746	0.885	0.894	0.570
14	0.698	0.685	0.844	0.662	0.546	14	0.740	0.721	0.684	0.629	0.579
15	0.581	0.531	0.672	0.504	0.476	15	0.608	0.574	0.543	0.437	0.516
16	0.602	0.546	0.510	0.455	0.455	16	0.626	0.586	0.594	0.375	
17	0.591	0.588	0.409	0.526	0.409	17	0.637	0.696	0.542	0.411	
18	0.602	0.680	0.401	0.423	0.316	18	0.652	0.667	0.554	0.355	
19	0.319	0.361	0.316	0.288	0.283	19	0.283	0.314	0.439	0.295	
c_n	0.986	1.056	1.109	1.080	0.948	c_n	1.044	1.109	1.162	1.111	1.007
c_m	-1.304	-1.326	-1.529	-1.300	-1.199	c_m	-1.381	-1.400	-1.595	-1.252	-1.325
c_b						c_b					
	$c_N' = 1.014$	$x'_{cp} = 37.5$				$c_N' = 1.062$					
	$c_m' = -1.265$	$y'_{cp} = 43.0$				$c_m' = -1.310$					
	$c_b' = .437$					$c_b' = .456$					
						$x'_{cp} = 37.3$					
						$y'_{cp} = 42.3$					

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TABLE XIII.- Continued.

$$[M \approx 1.10]$$

(u) $M = 1.06$
 $C_{NA} = 1.01$

(v) $M = 14.6^{\circ}$
 $\delta_{aL} = 1.1^{\circ}$ up
 $c_{NA} = 1.07$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	2.190	2.168	2.204	2.199	1.936	1	2.296	2.236	2.274	2.255	2.006
2	1.965	2.119	2.049	2.085	1.823	2	2.032	2.210	2.117	2.144	1.914
3	1.840	2.002	1.934	1.987	1.576	3	1.923	2.082	2.023	2.080	1.669
4	1.811	1.909	1.820	1.910	1.278	4	1.886	1.965	1.839	1.971	1.362
5	1.625	1.694	1.577	1.756	1.252	5	1.681	1.770	1.673	1.822	1.330
6	1.444	1.578	1.559	1.514	1.073	6	1.552	1.658	1.650	1.610	1.154
7	1.331	1.491	1.486	1.456	1.021	7	1.405	1.564	1.591	1.533	1.096
8	1.268	1.376	1.536	1.501	.858	8	1.369	1.494	1.582	1.584	.909
9	1.253	1.268	1.392	1.320	.804	9	1.329	1.364	1.459	1.295	.844
10	1.117	1.188	1.364	1.297	.597	10	1.242	1.255	1.223	1.128	.613
11	1.001	1.108	1.276	1.225	.597	11	1.086	1.128	1.088	1.030	.595
12	863	996	850	951	.526	12	.927	.963	.904	.903	.527
13	692	790	782	756	.627	13	.749	.756	.626	.827	.633
14	787	760	702	.562	.638	14	.840	.701	.770	.595	.630
15	642	506	.584	.403	.568	15	.672	.559	.635	.438	.501
16	681	526	.635	.383	.526	16	.622	.667	.683	.441	
17	708	687	.611	.439	.511	17	.553	.739	.696	.505	
18	656	668	.615	.409	.411	18	.471	.668	.707	.517	
19	239	352	.352	.512	.411	19	.243	.479	.596	.545	
c_n	1.105	1.165	1.196	1.139	1.071	c_n	1.155	1.217	1.224	1.155	1.125
c_m	-1.163	-1.139	-1.199	-1.1214	-1.146	c_m	-1.134	-1.191	-1.1648	-1.1223	-1.1462
c_b'	1.107	-1.133	$x'_{cp} = 37.0$	$y'_{cp} = 42.8$		c_n'	1.145				
						c_m'	-1.135				
						c_b'	.488				
											$x'_{cp} = 36.8$
											$y'_{cp} = 42.6$

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TABLE XIII.- Concluded.

$$\left[M \approx 1.10 \right]$$

$$(w) \quad M = 1.04 \quad \alpha = 17.4^\circ \\ C_{NA} = 1.18 \quad \delta_{a,L} = 0.1^\circ \text{ up}$$

Orifice	Row				
	1	2	3	4	5
1	2.332	2.262	2.314	2.304	2.088
2	2.097	2.263	2.198	2.229	1.976
3	1.966	2.124	2.097	2.127	1.751
4	1.955	2.042	1.951	2.054	1.442
5	1.731	1.835	1.744	1.882	1.372
6	1.613	1.735	1.712	1.681	1.210
7	1.473	1.612	1.625	1.598	1.128
8	1.432	1.560	1.652	1.623	0.906
9	1.394	1.325	1.310	1.283	0.854
10	1.306	1.182	1.221	1.156	0.636
11	1.190	1.095	1.123	1.086	0.626
12	0.879	1.018	0.943	0.949	0.582
13	0.625	0.872	0.870	0.865	0.699
14	0.705	0.784	0.792	0.653	0.665
15	0.645	0.659	0.663	0.489	0.527
16	0.681	0.832	0.799	0.519	
17	0.646	0.786	0.767	0.600	
18	0.598	0.703	0.749	0.648	
19	0.264	0.553	0.631	0.688	
c_h	1.186	1.265	1.257	1.213	1.171
c_m	-1.450	-1.632	-1.734	-1.380	-1.515
c_b					
	$C_N' = 1.189$	$x_{op}' = 27.3$			
	$C_m' = -1.463$	$y_{op}' = 42.7$			
	$C_b' = .508$				

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TABLE XIV
PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE DOUGLAS X-3 WING
[$M \approx 1.15$]

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
(a) $M = 1.14$ $c_{NA} = -0.03$	0.137	0.016	0.119	0.179	0.008	1	0.182	0.064	0.232	0.172	0.050
	•017	•076	•031	•172	•008	2	•082	•117	•065	•178	•046
	•042	•115	- •051	•217	- •098	3	•080	•151	- •017	•231	- •093
	- •040	•094	- •072	•212	- •054	4	•000	•114	- •021	•244	- •056
	- •089	•000	- •079	•054	- •036	5	- •042	•025	- •049	•095	- •029
	•000	- •035	•000	- •093	- •003	6	- •013	- •004	•004	- •067	- •003
	•000	- •072	•030	- •076	- •023	7	- •025	- •050	•051	- •067	- •010
	- •034	- •043	- •017	- •017	- •023	8	- •021	- •030	•149	- •017	- •019
	- •057	- •036	- •007	- •049	- •048	9	- •020	- •019	•010	- •042	- •045
	- •081	- •003	- •042	•016	•000	10	- •068	•016	- •022	•022	- •010
	- •054	- •028	- •007	•003	- •049	11	- •010	- •006	•029	•013	- •036
	•009	•010	•003	- •029	- •043	12	- •012	- •032	•022	- •022	- •036
	•035	- •085	- •026	- •056	- •035	13	- •057	- •081	- •013	- •032	- •028
	•142	•066	•042	•051	- •046	14	•153	•068	•045	•060	- •039
	•022	•055	- •023	- •040	- •087	15	•041	•054	- •019	- •020	- •089
	•061	•009	- •042	- •111	•16	•070	•009	- •016	- •016	- •096	
	•010	•052	•013	- •061	•17	•027	•064	•010	- •041		
	•034	•052	•051	- •076	•18	•056	•071	•047	- •065		
	- •045	- •003	•044	- •043	•19	- •041	•010	•046	- •046		
c_n	- 0.003	0.006	0.009	- 0.002	- 0.040	c_n	0.018	0.023	0.029	0.013	- 0.030
c_m	- .0065	- .0029	- .0014	.0132	.0097	c_m	- .0093	- .0047	- .0030	.0106	.0086
c_b						c_n'	0.015				
						c_m'	.0001				
						c_b'	.003				
						x'_{cp}	176.2				
						y'_{cp}	243.5				

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TABLE XIV.- Continued.

(c) $M = 1.14$
 $c_{NA} = 0.05$
 $\alpha = 2.0^\circ$
 $\delta_{aL} = 0.2^\circ$ up

Orifice	Row					C _{N'}	C _{m'}	C _{b'}	x' _{cp}	y' _{cp}
	1	2	3	4	5					
1	0.436	0.597	0.831	0.898	0.622					
2	.313	.484	.576	.668	.555					
3	.296	.428	.391	.601	.257					
4	.206	.286	.313	.514	.006					
5	.135	.168	.122	.428	.006					
6	.148	.142	.134	.056	.003					
7	.135	.072	.149	.072	.019					
8	.075	.082	.217	.143	-.003					
9	.064	.068	.108	.061	-.030					
10	.088	.092	.085	.101	.025					
11	.114	.104	.144	.075	-.031					
12	.124	.169	.113	.021	-.019					
13	.118	.108	.073	-.003	-.027					
14	.213	.161	.128	.094	-.043					
15	.117	.109	.052	.003	-.069					
16	.154	.092	.088	-.098						
17	.133	.131	.113	-.030						
18	.130	.126	.091	-.043						
19	.021	.052	.054	-.037						

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TABLE XIV.- Continued.

 $[M \approx 1.15]$

(e) $M = 1.15$
 $c_{NA} = 0.16$
 $\alpha = 3.6^\circ$
 $\delta_{AL} = 0.2^\circ$ up

(f) $M = 1.16$
 $c_{NA} = 0.19$
 $\alpha = 4.0^\circ$
 $\delta_{AL} = 0.2^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.606	0.724	0.936	1.010	0.707	1	0.742	0.803	1.002	1.071	0.769
2	•426	•594	•664	•770	•635	2	•476	•665	•738	•842	•706
3	•398	•606	•525	•718	•360	3	•471	•661	•606	•781	•425
4	•297	•426	•443	•589	•125	4	•365	•579	•504	•634	•171
5	•202	•247	•231	•531	•110	5	•259	•293	•342	•582	•161
6	•226	•199	•211	•199	•080	6	•264	•242	•315	•277	•121
7	•190	•136	•217	•159	•019	7	•224	•186	•263	•225	•104
8	•115	•122	•267	•256	•003	8	•145	•149	•317	•364	•024
9	•095	•107	•148	•107	-	9	•120	•134	•162	-	•012
10	•141	•150	•133	•152	•027	10	•172	•192	•165	•188	•021
11	•173	•143	•198	•118	-	11	•219	•188	•234	•142	-
12	•177	•218	•152	•063	-	12	•199	•250	•191	•081	-
13	•155	•173	•125	•031	-	13	•171	•211	•181	•064	-
14	•242	•188	•195	•124	-	14	•271	•208	•213	•129	-
15	•147	•142	•092	•022	-	15	•167	•153	•122	•040	-
16	•190	•128	•100	-	•082	16	•207	•145	•129	-	•055
17	•154	•164	•161	-	•030	17	•175	•187	•169	•021	
18	•167	•159	•147	-	•028	18	•181	•174	•179	•003	
19	•042	•086	•054	-	•016	19	•059	•117	•066	-	•012
c_n	0.191	0.211	0.228	0.196	0.119	c_n	0.225	0.253	0.270	0.240	0.160
c_m	-0.0324	-0.0255	-0.0211	.0107	.0202	c_m	-0.060	-0.0293	-0.0288	.0059	.0065
	$c_n^1 = 0.191$	$x^1_{cp} = 31.5$					$c_n^1 = 0.231$	$x^1_{cp} = 22.2$			
	$c_m^1 = -0.0124$	$y^1_{cp} = 40.7$					$c_m^1 = -0.0165$	$y^1_{cp} = 41.3$			
	$c_b^1 = .078$						$c_b^1 = .095$				

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TABLE XIV. - Continued.

 $[M \approx 1.15]$

(g) $M = 1.15$
 $c_{NA} = 0.23$
 $\alpha = 4.4^\circ$
 $\delta_{AL} = 0.2^\circ$ up

(h) $M = 1.15$
 $c_{NA} = 0.32$
 $\alpha = 5.4^\circ$
 $\delta_{AL} = 0.4^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.864	0.926	1.067	1.144	0.842	1	1.008	1.077	1.198	1.262	0.957
2	•556	•798	•522	•920	•783	2	•704	•961	•929	•036	•874
3	•541	•727	•720	•847	•506	3	•646	•847	•852	•986	•629
4	•464	•661	•586	•734	•253	4	•582	•806	•710	•872	•370
5	•361	•380	•450	•647	•209	5	•489	•556	•568	•757	•302
6	•315	•313	•411	•363	•165	6	•428	•404	•541	•464	•229
7	•286	•257	•382	•284	•150	7	•363	•359	•511	•433	•213
8	•188	•197	•374	•464	•111	8	•278	•269	•529	•279	•182
9	•170	•197	•223	•257	•039	9	•263	•278	•310	•353	•129
10	•230	•246	•218	•239	•045	10	•316	•348	•337	•388	•118
11	•212	•259	•276	•222	-	11	•376	•354	•410	•381	•089
12	•187	•316	•278	•122	-	12	•333	•391	•358	•229	•091
13	•208	•254	•232	•097	-	13	•258	•305	•309	•197	•044
14	•303	•250	•269	•173	-	14	•359	•331	•338	•236	•045
15	•208	•162	•158	•075	-	15	•254	•198	•224	•102	•009
16	•227	•177	•156	-	•024	16	•265	•202	•188	•018	
17	•200	•198	•184	•042	-	17	•243	•269	•210	•063	
18	•213	•210	•200	•034	-	18	•252	•252	•214	•055	
19	•083	•138	•103	-	•015	19	•112	•192	•168	•000	
c_n	0.270	0.310	0.330	0.300	0.210	c_n	0.361	0.397	0.426	0.396	0.298
c_m	-0.397	-0.369	-0.364	-0.022	.0110	c_m	-0.057	-0.0480	-0.0502	-0.0171	-0.0061

TABLE XIV.- Continued.

 $[M \approx 1.15]$

$$(1) \quad M = 1.15 \quad \alpha = 5.8^\circ \quad \delta_{aL} = 0.5^\circ \text{ up}$$

$$(j) \quad M = 1.15 \quad \alpha = 6.3^\circ \quad \delta_{aL} = 0.6^\circ \text{ up}$$

Orifice	Row				
	1	2	3	4	5
1	1.078	1.146	1.235	1.299	1.011
2	.765	1.034	1.005	1.094	.912
3	.701	.905	.895	1.032	.669
4	.645	.861	.781	.935	.432
5	.564	.647	.623	.807	.336
6	.468	.474	.604	.489	.272
7	.424	.412	.556	.536	.255
8	.338	.307	.607	.612	.222
9	.318	.316	.369	.399	.164
10	.364	.412	.394	.452	.150
11	.420	.415	.474	.452	.143
12	.366	.431	.395	.355	.143
13	.292	.318	.344	.263	.112
14	.390	.363	.364	.258	.123
15	.268	.211	.238	.120	.058
16	.287	.216	.216	.030	.077
17	.263	.310	.227	.077	.077
18	.277	.277	.231	.073	.073
19	.129	.129	.217	.180	.012

Orifice	Row				
	1	2	3	4	5
1	1.163	1.224	1.308	1.364	1.056
2	.840	1.096	1.073	1.164	.973
3	.763	.990	.965	1.093	.731
4	.710	.911	.862	1.006	.467
5	.629	.729	.680	.863	.384
6	.522	.529	.672	.563	.306
7	.474	.470	.618	.579	.300
8	.400	.391	.656	.659	.267
9	.383	.358	.489	.444	.217
10	.424	.463	.476	.509	.192
11	.466	.484	.540	.540	.188
12	.409	.473	.428	.440	.194
13	.321	.339	.382	.353	.132
14	.408	.396	.397	.267	.165
15	.120	.128	.291	.274	.148
16	.305	.305	.326	.255	.123
17	.288	.327	.257	.101	.048
18	.291	.310	.251	.091	.021
19	.150	.247	.192	.021	

$c_n = 0.404$	0.442	0.473	0.444	0.344
$c_m = -0.0597$	-0.0539	-0.0569	-0.0269	-.0182
$c_b = 0.418$	$x'_{cp} = 25.4$	$y'_{cp} = 42.4$		
$c_m' = -0.0433$				
$c_b' = .177$				

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TABLE XIV.- Continued.
 $[M \approx 1.15]$

$$(k) M = 1.15 \quad c_{NA} = 0.46 \quad \alpha = 6.9^\circ \quad q_{aL} = 0.6^\circ \text{ up}$$

Orifice	Row				
	1	2	3	4	5
1	1.262	1.299	1.371	1.426	1.127
2	.930	1.175	1.147	1.228	1.028
3	.819	1.065	1.029	1.156	.780
4	.769	.963	.926	1.063	.529
5	.685	.801	.743	.926	.431
6	.583	.603	.736	.635	.355
7	.527	.524	.676	.639	.341
8	.484	.430	.712	.713	.349
9	.431	.416	.551	.490	.291
10	.480	.533	.567	.573	.233
11	.511	.553	.601	.652	.218
12	.457	.505	.471	.492	.199
13	.344	.353	.405	.409	.155
14	.439	.428	.440	.319	.182
15	.317	.246	.303	.190	.156
16	.337	.273	.296	.078	
17	.315	.356	.268	.130	
18	.316	.345	.274	.103	
19	.167	.273	.201	.018	

$$(l) M = 1.15 \quad c_{NA} = 0.52 \quad \alpha = 7.8^\circ \quad q_{aL} = 0.6^\circ \text{ up}$$

Orifice	Row				
	1	2	3	4	5
1	1.411	1.428	1.472	1.539	1.231
2	1.034	1.295	1.271	1.330	1.140
3	.947	1.025	1.134	1.265	.893
4	.883	1.069	1.045	1.158	.616
5	.801	.902	.831	1.017	.514
6	.680	.789	.846	.744	.453
7	.646	.621	.769	.740	.474
8	.577	.537	.804	.796	.407
9	.543	.635	.713	.639	.356
10	.586	.635	.746	.709	.257
11	.588	.618	.675	.712	.245
12	.511	.558	.522	.562	.226
13	.387	.404	.464	.475	.193
14	.477	.475	.473	.396	.230
15	.366	.279	.365	.279	.190
16	.372	.305	.346	.355	
17	.361	.397	.324	.183	
18	.359	.411	.312	.157	
19	.190	.320	.197	.030	

Orifice	Row				
	1	2	3	4	5
c _n	0.500	0.539	0.582	0.547	0.439
c _m	-.0720	-.0682	-.0748	-.0446	-.0379
c _{m'}	0.514	x'cp = 36.3	y'cp = 42.6		
c _{b'}	-.0583				
c _b	.219				
c _{n'}	0.598	x'cp = 36.8	y'cp = 42.7		
c _{m'}	-.0703				
c _{b'}	.255				

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TABLE XIV.—Continued.
[$M \approx 1.15$]

(m) $C_{N_A} = 0.56$	$M = 1.15$	$\alpha = 8.2^{\circ}$	$\delta_{aL} = 0.7^{\circ}$ up
(n) $C_{N_A} = 0.60$	$M = 1.15$	$\alpha = 8.9^{\circ}$	$\delta_{aL} = 0.8^{\circ}$ up

Orifice	Flow					C _N C _m C _b
	1	2	3	4	5	
1	1•575	1•558	1•604	1•659	1•347	
2	1•213	1•426	1•379	1•451	1•243	
3	1•091	1•337	1•279	1•377	0•990	
4	0•993	1•194	1•167	1•284	0•729	
5	0•921	1•034	0•964	1•127	0•621	
6	0•792	0•935	0•953	0•864	0•572	
7	0•739	0•781	0•906	0•860	0•564	
8	0•688	0•667	0•908	0•907	0•466	
9	0•685	0•703	0•827	0•777	0•415	
10	0•669	0•709	0•858	0•808	0•290	
11	0•658	0•699	0•785	0•791	0•290	
12	0•572	0•618	0•590	0•668	0•260	
13	0•432	0•455	0•541	0•532	0•242	
14	0•519	0•511	0•539	0•443	0•263	
15	0•410	0•341	0•416	0•322	0•242	
16	0•410	0•340	0•420	0•233		
17	0•404	0•453	0•383	0•289		
18	0•402	0•459	0•374	0•230		
19	0•204	0•361	0•179	0•058		
						0.602
c _n	0.661	0.714	0.762	0.731		
c _m	-0.0919	-0.0895	-0.1037	-0.0770	-0.0617	
						x' _{cp} = 37.0 y' _{cp} = 42.8
C _N '	0.683					
C _m '	-0.0820					
C _b '	.293					

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TABLE XIV.- Continued.
 $[M \approx 1.15]$

$$(o) M = 1.15 \quad \alpha = 9.4^\circ \quad \delta_{aL} = 0.9^\circ \text{ up}$$

$$(p) M = 1.14 \quad \alpha = 10.2^\circ \quad \delta_{aL} = 1.1^\circ \text{ up}$$

$$C_{NA} = 0.66 \quad C_{NA} = 0.72$$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.645	1.636	1.678	1.717	1.405	1	1.719	1.721	1.759	1.786	1.478
2	1.329	1.508	1.452	1.506	1.285	2	1.413	1.601	1.540	1.600	1.381
3	1.169	1.410	1.345	1.451	1.056	3	1.273	1.515	1.423	1.536	1.138
4	1.074	1.280	1.241	1.352	0.790	4	1.151	1.405	1.318	1.434	0.862
5	0.994	1.112	1.018	1.184	0.693	5	1.090	1.201	1.094	1.279	0.791
6	0.862	1.002	1.014	1.038	0.619	6	0.955	1.097	1.097	1.027	0.679
7	0.800	0.909	0.985	0.922	0.640	7	0.897	1.041	1.074	1.008	0.709
8	0.769	0.735	0.984	0.986	0.510	8	0.866	0.830	1.068	1.065	0.548
9	0.769	0.769	0.902	0.839	0.453	9	0.855	0.843	0.974	0.922	0.506
10	0.721	0.772	0.910	0.873	0.314	10	0.798	0.843	0.990	0.938	0.343
11	0.698	0.757	0.866	0.836	0.317	11	0.765	0.819	0.937	0.906	0.357
12	0.618	0.660	0.649	0.703	0.275	12	0.672	0.723	0.724	0.767	0.314
13	0.466	0.488	0.582	0.582	0.266	13	0.495	0.542	0.647	0.642	0.312
14	0.548	0.550	0.585	0.472	0.299	14	0.586	0.577	0.635	0.513	0.337
15	0.448	0.376	0.449	0.349	0.254	15	0.477	0.423	0.515	0.398	0.309
16	0.433	0.360	0.458	0.266	0.16	16	0.460	0.392	0.514	0.313	
17	0.425	0.489	0.437	0.330	0.17	17	0.465	0.527	0.423	0.386	
18	0.434	0.495	0.409	0.296	0.18	18	0.462	0.531	0.453	0.351	
19	0.219	0.379	0.169	0.109	0.19	19	0.248	0.403	0.179	0.194	
c_n	0.715	0.770	0.819	0.786	0.654	c_n	0.779	0.839	0.887	0.855	0.718
c_m	-0.0987	-0.0972	-0.1139	-0.0867	-0.0693	c_m	-0.1074	-0.1062	-0.1272	-0.0989	-0.0800
C_N^1	0.737		$x_{ep}^1 = 37.2$			C_N^1	0.802		$x_{ep}^1 = 37.4$		
C_m^1	-0.0898		$y_{ep}^1 = 42.8$			C_m^1	-0.0997				
C_D^1	.215					C_D^1	.243				

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TABLE XIV.- Continued.

 $[M \approx 1.15]$

$$(q) M = 1.14 \quad C_{NA} = 0.80 \quad \alpha = 11.2^\circ \quad \delta_{aL} = 1.2^\circ \text{ up}$$

$$(r) M = 1.14 \quad C_{NA} = 0.86 \quad \alpha = 12.2^\circ \quad \delta_{aL} = 1.2^\circ \text{ up}$$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.778	1.803	1.841	1.876	1.955	1	1.830	1.882	1.909	1.936	1.622
2	1.492	1.702	1.620	1.671	1.461	2	1.557	1.781	1.690	1.743	1.521
3	1.413	1.600	1.528	1.633	1.215	3	1.523	1.687	1.608	1.697	1.294
4	1.277	1.498	1.415	1.517	0.946	4	1.380	1.582	1.498	1.594	1.016
5	1.205	1.298	1.196	1.385	0.889	5	1.295	1.377	1.440	1.460	0.967
6	1.019	1.183	1.188	1.120	0.768	6	1.133	1.283	1.258	1.221	0.839
7	0.976	1.149	1.171	1.103	0.765	7	1.081	1.224	1.243	1.163	0.811
8	0.957	0.923	1.148	1.151	0.617	8	1.043	1.015	1.226	1.227	0.671
9	0.944	0.923	1.063	1.003	0.546	9	1.022	0.993	1.130	1.071	0.600
10	0.874	0.908	1.045	1.020	0.389	10	0.953	0.972	1.116	1.072	0.443
11	0.816	0.877	1.008	0.962	0.391	11	0.888	0.936	1.065	1.018	0.443
12	0.723	0.775	0.829	0.840	0.348	12	0.764	0.899	0.845	0.884	0.381
13	0.544	0.595	0.726	0.686	0.386	13	0.588	0.665	0.804	0.758	0.436
14	0.623	0.623	0.703	0.561	0.398	14	0.659	0.660	0.767	0.597	0.437
15	0.510	0.463	0.573	0.430	0.367	15	0.540	0.519	0.642	0.476	0.414
16	0.493	0.433	0.598	0.365	0.365	16	0.532	0.471	0.661	0.422	
17	0.503	0.564	0.548	0.437	0.412	17	0.544	0.603	0.477	0.497	
18	0.512	0.574	0.404	0.241	0.235	18	0.553	0.604	0.404	0.461	
19	0.287	0.400	0.287	0.241	0.19	19	0.348	0.416	0.300	0.263	
c_n	0.844	0.905	0.959	0.927	0.787	c_n	0.911	0.970	1.022	0.935	0.845
c_m	-0.1170	-0.1157	-0.1394	-0.1111	-0.0918	c_m	-0.1266	-0.1260	-0.1505	-0.1221	-0.1034
C_N'	0.868					C_N'	0.929				
C_m'		-0.1101				C_m'	-0.1198				
C_b'			.373			C_b'	.398				
						x'_{cp}	37.7				
						y'_{cp}	42.9				

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TABLE XIV. - Continued.

 $[M \approx 1.15]$

$$(s) \quad M = 1.14 \quad \alpha = 13.2^\circ \quad c_{NA} = 0.92 \quad \delta_{aL} = 1.2^\circ \text{ up}$$

$$(t) \quad M = 1.13 \quad c_{NA} = 0.96 \quad \delta_{aL} = 13.9^\circ$$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.900	1.949	1.932	1.987	1.698	1	1.968	2.010	2.039	2.026	1.749
2	1.643	1.850	1.780	1.817	1.592	2	1.739	1.905	1.829	1.880	1.661
3	1.614	1.764	1.689	1.758	1.357	3	1.668	1.830	1.763	1.825	1.426
4	1.470	1.663	1.577	1.659	1.086	4	1.567	1.733	1.631	1.726	1.153
5	1.388	1.448	1.365	1.537	1.036	5	1.472	1.533	1.437	1.589	1.107
6	1.249	1.354	1.334	1.291	0.899	6	1.332	1.432	1.406	1.371	0.967
7	1.173	1.298	1.305	1.252	0.873	7	1.229	1.383	1.394	1.308	0.919
8	1.119	1.121	1.310	1.278	0.717	8	1.186	1.230	1.359	1.356	0.773
9	1.084	1.074	1.201	1.138	0.666	9	1.139	1.151	1.266	1.197	0.714
10	1.019	1.013	1.182	1.129	0.494	10	1.073	1.072	1.235	1.173	0.544
11	0.936	1.009	1.129	1.076	0.479	11	0.977	1.051	1.176	1.123	0.542
12	0.803	0.904	0.952	0.946	0.420	12	0.847	0.960	1.007	0.994	0.467
13	0.623	0.708	0.878	0.823	0.503	13	0.653	0.772	0.938	0.863	0.550
14	0.693	0.688	0.835	0.639	0.500	14	0.738	0.749	0.847	0.693	0.559
15	0.581	0.561	0.703	0.519	0.465	15	0.602	0.585	0.679	0.549	0.504
16	0.576	0.515	0.653	0.455	0.455	16	0.630	0.570	0.622	0.496	
17	0.587	0.642	0.476	0.547	0.427	17	0.627	0.677	0.562	0.526	
18	0.588	0.626	0.457	0.503	0.325	18	0.639	0.677	0.539	0.471	
19	0.371	0.430	0.382	0.325	0.349	19	0.396	0.462	0.314		

c_n	0.971	1.028	1.084	1.042	0.906	c_n	1.027	1.089	1.132	1.089	0.962
c_m	-1.348	-1.347	-1.612	-1.327	-1.162	c_m	-1.435	-1.460	-1.684	-1.385	-1.285
c_b	0.985		$x'_{cp} = 28.1$			$c_n' = 1.038$		$x'_{cp} = 38.2$			
			$y'_{cp} = 42.9$			$c_m' = -1.375$		$y'_{cp} = 42.3$			
			$c_b' = .422$			$c_b' = .444$					

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TABLE XIV.- Continued.
 $[M \approx 1.15]$

(u) $M = 1.13$
 $c_{N_A} = 1.00$
 $\alpha = 14.7^\circ$
 $\delta_{A_L} = 1.1^\circ$ up

(v) $M = 1.12$
 $c_{N_A} = 1.06$
 $\alpha = 17.0^\circ$
 $\delta_{A_L} = 1.0^\circ$ up

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	2.027	2.037	2.075	2.066	1.787	1	2.166	2.082	2.133	2.120	1.886
2	1.847	1.976	1.885	1.931	1.714	2	1.970	2.081	1.996	2.280	1.793
3	1.746	1.885	1.810	1.875	1.493	3	1.845	1.953	1.890	1.960	1.564
4	1.656	1.792	1.697	1.778	1.181	4	1.771	1.876	1.780	1.854	1.277
5	1.536	1.594	1.495	1.627	1.175	5	1.586	1.684	1.588	1.719	1.234
6	1.401	1.490	1.458	1.428	1.009	6	1.489	1.572	1.557	1.516	1.096
7	1.297	1.420	1.419	1.365	.963	7	1.332	1.492	1.504	1.452	1.018
8	1.234	1.320	1.411	1.406	.806	8	1.288	1.409	1.494	1.483	.880
9	1.178	1.210	1.311	1.232	.759	9	1.245	1.291	1.304	1.304	.811
10	1.100	1.119	1.285	1.226	.589	10	1.160	1.196	1.350	1.283	.646
11	1.000	1.077	1.217	1.159	.587	11	1.046	1.147	1.166	1.110	.626
12	.853	.997	1.017	1.025	.503	12	.888	1.058	.864	.892	.563
13	.685	.806	.882	.909	.591	13	.705	.791	.798	.794	.656
14	.762	.767	.724	.668	.607	14	.793	.684	.736	.596	.652
15	.625	.617	.608	.486	.537	15	.657	.537	.608	.446	.592
16	.650	.584	.631	.428		16	.680	.571	.658	.426	
17	.655	.638	.607	.459		17	.705	.692	.643	.478	
18	.677	.643	.589	.418		18	.589	.661	.630	.487	
19	.288	.391	.517	.340		19	.201	.440	.568	.458	
c_n	1.065	1.127	1.156	1.110	1.008	c_n	1.110	1.172	1.186	1.139	1.076
c_m	-1.470	-1.487	-1.667	-1.343	-1.387	c_m	-1.470	-1.484	-1.631	-1.255	-1.507
c_b'	1.069		$x'_{cp} = 37.9$			c_n'	1.109				
			$y'_{cp} = 42.7$			c_m'	-1.168				
						c_b'	.474				
						$x'_{cp} = 37.3$					
						$y'_{cp} = 42.7$					

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TABLE XIV.- Concluded.
 $[M \approx 1.15]$

$$(w) M = 1.11 \\ C_{H_A} = 1.13 \\ \alpha = 17.8^\circ \\ \delta_{aL} = 0.3^\circ \text{ up}$$

Orifice	Row				
	1	2	3	4	5
1	2.0229	2.0147	2.0204	2.0179	1.993
2	2.005	2.0139	2.0095	2.0346	1.856
3	1.890	2.0112	1.969	2.0027	1.632
4	1.854	1.938	1.869	1.954	1.339
5	1.629	1.758	1.664	1.793	1.299
6	1.514	1.632	1.632	1.562	1.142
7	1.371	1.534	1.550	1.522	1.088
8	1.322	1.453	1.548	1.530	.907
9	1.296	1.373	1.421	1.255	.867
10	1.228	1.245	1.205	1.106	.659
11	1.173	1.085	1.093	1.024	.654
12	0.963	0.975	0.903	0.904	.584
13	0.766	0.813	0.848	0.816	.711
14	0.815	0.742	0.757	0.651	.675
15	0.588	0.619	0.632	0.468	.556
16	0.524	0.692	0.671	0.484	
17	0.548	0.749	0.677	0.549	
18	0.486	0.712	0.680	0.572	
19	0.247	0.594	0.593	0.563	

c_n	1.134	1.217	1.206	1.154	1.130
c_m	-.1405	-.1574	-.1626	-.1282	-.1567
c_b					

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TABLE XV
PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE DOUGLAS X-5 WING

$[M \approx 0.71; \delta_F = 7^\circ \pm 1.5^\circ]$

(a) $M = 0.70$ $\alpha = 1.4^\circ$
 $c_{NA} = -0.11$ $\delta_{AL} = 0.1^\circ$ up
 $\delta_F = 8.1^\circ$

(b) $M = 0.70$ $\alpha = 1.9^\circ$
 $c_{NA} = -0.05$ $\delta_{AL} = 0.1^\circ$ up
 $\delta_F = 8.1^\circ$

Orifice	Row					Row	
	1	2	3	4	5		
1	-0.492	-0.843	-0.626	-0.788	-0.568	1	-0.325
2	-0.321	-0.231	-0.337	-0.480	-0.148	2	-0.124
3	-0.217	-0.054	-0.205	-0.177	0.041	3	-0.108
4	-0.057	0.178	-0.041	-0.028	0.415	4	0.113
5	0.094	0.285	0.293	0.093	0.177	5	0.254
6	0.081	0.193	0.240	0.284	0.111	6	0.161
7	0.027	0.041	0.137	0.203	0.021	7	0.174
8	0.040	0.152	0.241	0.291	-0.010	8	0.133
9	0.086	0.042	0.105	0.094	-0.041	9	0.160
10	0.030	0.156	0.072	0.062	-0.073	10	0.059
11	0.021	-	0.010	0.042	-0.042	11	0.106
12	0.020	0.084	0.073	0.041	-0.010	12	0.030
13	0.028	0.010	0.000	-0.042	0.010	13	0.055
14	0.124	0.073	0.096	0.021	0.000	14	0.072
15	0.010	0.000	-0.031	-0.064	-0.021	15	0.010
16	0.031	0.024	0.051	0.010	0.010	16	0.020
17	0.021	0.052	-0.010	0.021	0.010	17	0.011
18	-0.050	0.042	0.051	0.000	0.032	18	-0.010
19	0.010	0.021	0.043	0.032	0.000	19	0.051
c_n	0.008	0.055	0.053	0.029	0.002	c_n	0.066
c_m	-0.0125	-0.0184	-0.0205	-0.0144	-0.0037	c_m	-0.0105

Orifice	Row					Row	
	1	2	3	4	5		
1	-0.325	-0.244	-0.149	-0.256	-0.241	1	-0.325
2	-0.124	-0.054	-0.209	-0.123	-0.093	2	-0.124
3	-0.027	-0.081	-0.027	-0.027	-0.095	3	-0.027
4	0.081	0.081	0.081	0.069	0.461	4	0.081
5	0.217	0.217	0.217	0.227	0.227	5	0.217
6	0.246	0.246	0.246	0.160	0.160	6	0.246
7	0.108	0.108	0.108	0.282	0.062	7	0.108
8	0.134	0.134	0.134	-0.041	-0.041	8	0.134
9	0.113	0.113	0.113	0.000	0.000	9	0.113
10	0.171	0.171	0.171	0.103	-0.082	10	0.171
11	0.363	0.363	0.363	0.063	0.000	11	0.363
12	0.230	0.230	0.230	0.010	-0.021	12	0.230
13	0.282	0.282	0.282	0.010	-0.021	13	0.282
14	0.319	0.319	0.319	0.010	-0.020	14	0.319
15	0.186	0.186	0.186	0.010	-0.020	15	0.186
16	0.112	0.112	0.112	0.010	-0.020	16	0.112
17	0.063	0.063	0.063	0.010	-0.020	17	0.063
18	0.031	0.031	0.031	0.010	-0.020	18	0.031
19	0.084	0.084	0.084	0.010	-0.020	19	0.084
c_n	0.074	0.074	0.074	0.046	-0.0099	c_n	0.074
c_m	-0.027	-0.027	-0.027	-0.0099	-	c_m	-0.027

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$x'_{CP} = 65.8$
 $y'_{CP} = 37.1$

$c_{N'} = 0.084$
 $c_{M'} = -0.0084$
 $c_b' = .033$

$x'_{CP} = 35.0$
 $y'_{CP} = 39.3$

TABLE XV.- Continued.

 $[M \approx 0.71; \delta_f = 7^\circ \pm 1.5^\circ]$

(c) $M = 0.70$
 $c_{NA} = 0.02$

$\alpha = 2.6^\circ$
 $\delta_{fL} = 0.1^\circ$ up
 $\delta_f = 7.6^\circ$

(d) $M = 0.70$
 $c_{NA} = 0.11$

$\alpha = 3.7^\circ$
 $\delta_{fL} = 0.1^\circ$ up
 $\delta_f = 7.4^\circ$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	-0.041	0.013	0.135	0.040	-0.107	1	0.204	0.296	0.365	0.297	0.107
2	0.097	0.121	-	0.070	0.069	2	0.249	0.337	0.167	0.313	0.240
3	0.054	0.188	0.108	0.135	0.162	3	0.269	0.390	0.285	0.337	0.216
4	0.226	0.326	0.175	0.192	0.512	4	0.409	0.461	0.310	0.412	0.532
5	0.361	0.445	0.476	0.277	0.217	5	0.521	0.580	0.555	0.383	0.268
6	0.268	0.329	0.383	0.444	0.191	6	0.362	0.397	0.529	0.538	0.201
7	0.200	0.189	0.366	0.350	0.052	7	0.294	0.297	0.380	0.430	0.094
8	0.214	0.288	0.345	0.357	-	8	0.267	0.274	0.439	0.426	0.031
9	0.171	0.155	0.177	0.155	-	9	0.246	0.176	0.281	0.196	-0.020
10	0.119	0.207	0.153	0.144	-	10	0.159	0.238	0.163	0.154	-
11	0.074	0.058	0.113	0.074	0.000	11	0.117	0.116	0.175	0.126	0.010
12	0.100	0.135	0.062	0.051	-	12	0.130	0.155	0.082	0.061	-0.042
13	0.064	0.031	0.051	-	0.010	13	0.080	0.083	0.052	0.021	0.030
14	0.123	0.094	0.067	0.051	0.000	14	0.123	0.104	0.086	0.020	-0.010
15	0.010	0.000	0.010	-	0.042	-	0.011	0.000	0.031	-0.010	-0.021
16	0.041	0.020	0.061	-	0.021	16	0.051	0.030	0.072	-	0.052
17	0.021	0.041	0.031	0.051	-	17	0.043	0.041	0.021	0.071	-
18	0.000	0.041	0.041	-	0.021	18	-	0.020	0.052	0.041	-0.084
19	0.010	0.031	0.075	0.063	-	19	0.040	0.041	0.053	0.063	-
c_n	0.127	0.159	0.149	0.134	0.068	c_n	0.186	0.211	0.209	0.184	0.117
c_m	-0.0125	-0.0136	-0.0151	-0.0050	.0025	c_m	-0.0104	-0.0125	-0.0142	.0033	.0011
$c_{N'} = 0.133$ $c_{m'} = -0.0084$ $c_b' = .053$											
$x'_{op} = 31.3$ $y'_{op} = 39.5$											
$c_{N'} = 0.184$ $c_{m'} = .0056$ $c_b' = .074$											
$x'_{op} = 28.1$ $y'_{op} = 40.2$											

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TABLE XV.- Continued.

 $[M \approx 0.71; \delta_f = 7^\circ \pm 1.5^\circ]$

(e) $M = 0.70$
 $c_{NA} = 0.17$

$\alpha = 4.4^\circ$
 $\delta_{BL} = 0.1^\circ$ up
 $\delta_f = 7.2^\circ$

$\alpha = 4.8^\circ$
 $\delta_{BL} = 0.1^\circ$ up
 $\delta_f = 7.1^\circ$

Orifice	Row					Orifice	Row					
	1	2	3	4	5		1	2	3	4	5	
1	0.555	0.732	0.901	0.924	1	0.636	1.079	1.321	1.170	0.428		
2	.538	.537	.403	.333	2	.676	.510	.556	.829	.412		
3	.483	.524	.419	.337	3	.591	.604	.487	.524	.404		
4	.619	.555	.511	.507	4	.774	.595	.471	.603	.581		
5	.653	.659	.620	.566	5	.706	.740	.725	.579	.319		
6	.468	.533	.659	.644	6	.468	.533	.633	.671	.230		
7	.373	.363	.406	.537	7	.426	.403	.500	.537	.146		
8	.333	.424	.257	.507	8	.347	.383	.530	.548	.061		
9	.310	.258	.321	.247	-	.010	.331	.320	.332	.010		
10	.168	.258	.223	.195	-	.082	10	.198	.234	.205		
11	.170	.087	.185	.157	-	.031	11	.180	.135	.168		
12	.109	.165	.092	.122	-	.010	12	.109	.176	.216		
13	.092	.052	.092	-	.021	.000	13	.092	.092	.122		
14	.133	.104	.086	.020	.021	.000	14	.123	.093	.092		
15	.050	.010	.000	-	.053	.032	15	.050	.041	.063		
16	.051	.060	.051	.010	-	.010	16	.041	.030	.020		
17	.021	.031	.010	-	.030	.000	17	.021	.061	.020		
18	- .030	.052	.041	-	.021	.000	18	-	.020	.000		
19	.040	.031	.042	.021	-	.019	19	.020	.031	.053		
c_n	0.248	0.273	0.283	0.257	0.157	c_{II}	0.274	0.295	0.300	0.293	0.189	
c_{III}	-.0049	-.0086	-.0082	.0050	.0045	c_{III}	-.0022	-.0072	-.0042	.0109	.0018	
c_N^I	0.247	$x'_{cp} = 25.6$					$c_N^I = 0.272$	$x'_{cp} = 24.7$				
c_M^I	-.0015	$y'_{cp} = 40.8$					$c_M^I = .0008$	$y'_{cp} = 41.5$				
c_B^I	.101						$c_B^I = .113$					

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TABLE XV.- Continued.

$$[M \approx 0.71; \delta_f = 7^\circ \pm 1.5^\circ]$$

(g) $M = 0.70$ $\alpha = 5.9^\circ$
 $C_{NA} = 0.26$ $\delta_{BL} = 0^\circ$
 $\delta_f = 7.0^\circ$

Orifice	Row				
	1	2	3	4	5
1	0.973	1.604	1.750	1.505	1.069
2	1.006	1.341	1.305	1.358	0.917
3	0.859	0.818	0.918	1.222	0.471
4	0.970	0.703	0.645	0.944	0.600
5	0.772	0.806	0.738	0.763	0.370
6	0.602	0.641	0.698	0.697	0.290
7	0.493	0.470	0.540	0.536	0.187
8	0.386	0.479	0.609	0.589	0.051
9	0.373	0.350	0.362	0.267	0.051
10	0.247	0.371	0.274	0.277	-0.021
11	0.180	0.174	0.247	0.167	-0.062
12	0.179	0.207	0.133	0.162	-0.010
13	0.110	0.073	0.082	0.000	0.050
14	0.163	0.114	0.124	0.071	0.051
15	0.040	0.041	-0.021	-0.021	-0.053
16	0.071	0.050	0.081	-0.021	-0.021
17	0.032	0.041	-0.010	-0.010	-0.010
18	-0.020	0.052	0.061	-0.010	0.010
19	-0.020	0.031	0.053	0.073	0.031

Orifice	Row				
	1	2	3	4	5
(h) $M = 0.70$ $C_{NA} = 0.31$	1.226	1.904	2.147	1.713	1.212
$\alpha = 6.9^\circ$ $\delta_{BL} = 0.2^\circ$ $\delta_f = 6.8^\circ$	1.387	1.791	1.632	1.596	1.205
	1.056	1.256	1.346	1.485	0.751
	1.219	0.889	0.776	1.350	0.568
	0.862	0.830	0.814	0.996	0.389
	0.653	0.693	0.761	0.774	0.319
	0.557	0.495	0.659	0.587	0.238
	0.491	0.518	0.633	0.614	0.081
	0.404	0.349	0.413	0.358	0.071
	0.266	0.349	0.305	0.255	0.010
	0.200	0.164	0.266	0.188	0.093
	0.158	0.237	0.133	0.151	0.041
	0.137	0.124	0.102	0.041	0.020
	0.14	0.193	0.113	0.071	0.051
	0.010	0.041	0.000	-0.042	0.010
	0.061	0.080	0.081	0.061	0.010
	0.032	0.030	0.062	0.061	-0.041
	0.019	0.030	0.063	0.063	0.052

Orifice	Row				
	1	2	3	4	5
c _{II}	0.344	0.389	0.382	0.376	0.274
c _{III}	-0.0019	-0.0013	-0.0027	0.047	0.0073
x' _{cp}	0.355	0.382	0.376	0.274	0.437
y' _{cp}	-0.0050	-0.0013	-0.0027	0.047	0.0073
c _N '	0.355	0.410	0.442	0.434	0.343
c _M '	-0.0050	-0.0013	-0.0027	0.047	0.0073
c _B '	0.148	0.173	0.206	0.206	0.071

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TABLE XV.- Continued.

 $[M \approx 0.71; \delta_f = 7^\circ \pm 1.5^\circ]$

(1) $M = 0.71$
 $c_{NA} = 0.34$

$\alpha = 7.4^\circ$
 $\delta_{BL} = 0.2^\circ$ down
 $Q_f = 6.7^\circ$

(3) $M = 0.71$
 $c_{WA} = 0.40$

$\alpha = 8.3^\circ$
 $\delta_{BL} = 0.5^\circ$ down
 $Q_f = 6.5^\circ$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.375	2.027	2.274	1.791	1.359	1	1.740	2.130	2.461	1.967	1.497
2	1.525	2.000	1.837	1.636	1.286	2	1.801	2.148	1.841	1.462	
3	1.179	1.523	1.427	1.645	.891	3	1.397	1.898	1.712	1.125	
4	1.320	1.055	1.035	1.473	.583	4	1.520	1.514	1.412	1.614	.648
5	.973	.889	.846	1.221	.396	5	1.086	.990	1.074	1.318	.465
6	.766	-.687	.885	.807	.326	6	.880	.884	.906	1.027	.344
7	.578	.531	.614	.675	.236	7	.667	.634	.770	.790	.276
8	.539	.540	.680	.581	.150	8	.628	.618	.728	.753	.120
9	.411	.387	.460	.345	.060	9	.503	.425	.468	.394	.100
10	.234	.346	.301	.294	.051	10	.291	.395	.399	.353	.071
11	.230	.200	.294	.207	.062	11	.250	.247	.353	.257	.102
12	.177	.235	.111	.150	.041	12	.166	.264	.091	.229	.010
13	.118	.061	.141	.082	.060	13	.135	.133	.101	.051	.069
14	.161	.123	.075	.030	.010	14	.160	.112	.103	.100	.030
15	.020	.081	.020	.000	.010	15	.040	.080	.030	-.041	.031
16	.070	.059	.030	-.020		16	.080	.049	.090	.030	
17	.042	.070	.030	.020		17	.042	.090	.010	.010	
18	-.020	.092	.020	-.051		18	-	.019	.061	.040	-.041
19	.020	-.020	.073	.062		19	.040	.050	.094	.072	
c_n	0.435	0.473	0.474	0.459	0.378	c_n	0.505	0.552	0.553	0.545	0.443
c_m	.0085	.0056	.0108	.0251	.0092	c_m	.0121	.0106	.0102	.0203	.0088
$c_n' = 0.439$						$c_m' = 0.515$					
$c_m' = .0134$						$x'_{cp} = 21.8$					
$c_b' = .185$						$y'_{cp} = 42.2$					
						$x'_{cp} = 22.0$					
						$y'_{cp} = 42.4$					

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TABLE XV.- Continued.

		$M \approx 0.71; \delta_F = 70 \pm 1.5^\circ$				
		$\alpha = 8.7^\circ$			$\alpha = 9.7^\circ$	
		$C_{NA} = 0.45$		$C_{NA} = 0.51$		$C_{NA} = 0.51$
		$\delta_{BL} = 0.4^\circ$ down		$\delta_{BL} = 0.3^\circ$ down		$\delta_F = 6.5^\circ$
Orifice	Row	1	2	3	4	5
1	1.966	2.168	2.355	2.033	1.562	1
2	1.855	2.135	2.046	1.947	1.541	2
3	1.489	1.990	1.805	1.781	1.138	3
4	1.589	1.687	1.357	1.735	0.698	4
5	1.138	1.122	1.074	1.434	0.475	5
6	0.880	0.831	1.009	1.053	0.364	6
7	0.719	0.647	0.770	0.843	0.286	7
8	0.615	0.591	0.793	0.766	0.170	8
9	0.482	0.425	0.529	0.434	0.110	9
10	0.330	0.385	0.379	0.292	0.081	10
11	0.250	0.256	0.333	0.267	0.113	11
12	0.195	0.203	0.091	0.159	0.082	12
13	0.126	0.092	0.181	0.091	0.049	13
14	0.160	0.132	0.121	0.070	0.040	14
15	0.050	0.080	0.051	-0.031	-	15
16	0.060	0.049	0.070	-0.020	0.087	16
17	0.042	0.070	-0.010	0.040	0.041	17
18	-0.019	0.071	-0.070	-0.051	-0.009	18
19	0.040	0.030	0.063	0.082	0.019	19

Orifice	Row	1	2	3	4	5
1	1.966	2.168	2.355	2.033	1.562	1
2	1.855	2.135	2.046	1.947	1.541	2
3	1.489	1.990	1.805	1.781	1.138	3
4	1.589	1.687	1.357	1.735	0.698	4
5	1.138	1.122	1.074	1.434	0.475	5
6	0.880	0.831	1.009	1.053	0.364	6
7	0.719	0.647	0.770	0.843	0.286	7
8	0.615	0.591	0.793	0.766	0.170	8
9	0.482	0.425	0.529	0.434	0.110	9
10	0.330	0.385	0.379	0.292	0.081	10
11	0.250	0.256	0.333	0.267	0.113	11
12	0.195	0.203	0.091	0.159	0.082	12
13	0.126	0.092	0.181	0.091	0.049	13
14	0.160	0.132	0.121	0.070	0.040	14
15	0.050	0.080	0.051	-0.031	-	15
16	0.060	0.049	0.070	-0.020	0.087	16
17	0.042	0.070	-0.010	0.040	0.041	17
18	-0.019	0.071	-0.070	-0.051	-0.009	18
19	0.040	0.030	0.063	0.082	0.019	19

Orifice	Row	1	2	3	4	5
1	1.966	2.168	2.355	2.033	1.562	1
2	1.855	2.135	2.046	1.947	1.541	2
3	1.489	1.990	1.805	1.781	1.138	3
4	1.589	1.687	1.357	1.735	0.698	4
5	1.138	1.122	1.074	1.434	0.475	5
6	0.880	0.831	1.009	1.053	0.364	6
7	0.719	0.647	0.770	0.843	0.286	7
8	0.615	0.591	0.793	0.766	0.170	8
9	0.482	0.425	0.529	0.434	0.110	9
10	0.330	0.385	0.379	0.292	0.081	10
11	0.250	0.256	0.333	0.267	0.113	11
12	0.195	0.203	0.091	0.159	0.082	12
13	0.126	0.092	0.181	0.091	0.049	13
14	0.160	0.132	0.121	0.070	0.040	14
15	0.050	0.080	0.051	-0.031	-	15
16	0.060	0.049	0.070	-0.020	0.087	16
17	0.042	0.070	-0.010	0.040	0.041	17
18	-0.019	0.071	-0.070	-0.051	-0.009	18
19	0.040	0.030	0.063	0.082	0.019	19

$$\begin{aligned} C_N' &= 0.526 \\ C_m' &= .0189 \\ C_b' &= .223 \end{aligned}$$

$$\begin{aligned} x'_{cp} &= 21.4 \\ y'_{cp} &= 42.4 \\ z'_{cp} &= .256 \end{aligned}$$

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TABLE XV.- Continued.

$$\left[M \approx 0.71; \delta_f = 7^\circ \pm 1.5^\circ \right]$$

(m) $M = 0.72$
 $c_{NA} = 0.54$
 $\alpha = 10.2^\circ$
 $\delta_{BL} = 0^\circ$
 $\delta_f = 6.5^\circ$

Orifice	Row				
	1	2	3	4	5
1	2.662	1.968	1.925	1.921	1.670
2	2.258	2.007	1.630	1.812	1.548
3	1.773	1.791	1.675	1.755	1.313
4	1.878	1.869	1.565	1.711	0.824
5	1.399	1.526	1.384	1.507	0.652
6	1.076	1.266	1.260	1.230	0.511
7	0.670	0.954	1.138	1.015	0.374
8	0.756	0.842	1.028	0.998	0.183
9	0.616	0.644	0.755	0.633	0.145
10	0.402	0.546	0.576	0.495	0.029
11	0.291	0.302	0.467	0.416	0.148
12	0.273	0.293	0.185	0.230	0.069
13	0.139	0.088	0.136	0.088	0.076
14	0.193	0.098	0.108	0.067	0.107
15	0.029	0.087	0.088	-	0.020
16	0.086	0.057	0.087	0.029	0.058
17	0.030	0.087	0.039	0.058	0.030
18	0.000	0.049	0.086	0.030	0.079
19	0.019	0.010	0.090	0.010	0.019

Orifice	Row				
	1	2	3	4	5
(n) $M = 0.72$ $c_{NA} = 0.56$ $\alpha = 10.3^\circ$ $\delta_{BL} = 0.1^\circ$ up $\delta_f = 6.5^\circ$	2.670	1.705	1.878	1.673	1.589
	2.194	1.683	1.572	1.589	1.555
	1.670	1.607	1.631	1.521	1.299
	1.777	1.645	1.497	1.486	0.908
	1.383	1.446	1.344	1.391	0.780
	1.151	1.353	1.221	1.154	0.571
	1.022	1.082	1.100	1.016	0.467
	0.947	0.998	1.029	0.99	0.247
	0.739	0.810	0.795	0.712	0.201
	10	0.463	0.675	0.576	0.077
	11	0.347	0.407	0.539	0.185
	12	0.270	0.348	0.259	0.097
	13	0.180	0.126	0.192	0.132
	14	0.172	0.136	0.124	0.106
	15	0.066	0.105	0.125	0.069
	16	0.076	0.112	0.143	0.096
	17	0.050	0.115	0.086	0.143
	18	0.009	0.087	0.076	0.078
	19	0.009	0.019	0.089	0.078
c_n	0.649	0.670	0.665	0.639	0.543
c_m	.0170	.0076	-.0101	.0098	.0022
c_b				.0108	-.0139
					-.0254
					-.0173
					-.0135

$c_n = 0.623$
 $c_m = .0108$
 $c_b = .261$

$x'_{cp} = 23.3$
 $y'_{cp} = 41.9$

$x'_{cp} = 26.2$
 $y'_{cp} = 41.9$

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TABLE XV. - Continued.

 $[M \approx 0.71; \delta_F = 70 \pm 1.5^\circ]$

$$(o) M = 0.72 \quad \alpha = 11.4^\circ \quad \alpha_{BL} = 0^\circ \quad \alpha_{FL} = 6.6^\circ$$

$$(p) M = 0.72 \quad \alpha = 13.0^\circ \quad \alpha_{BL} = 0.1^\circ \text{ up}$$

$$\delta_F = 6.5^\circ$$

Orifice	Row					Row					
	1	2	3	4	5						
1	2.796	1.781	1.706	1.531	1	2.491	1.460	1.583	1.415	1.345	
2	2.119	1.762	1.500	1.535	2	1.905	1.413	1.397	1.213	1.300	
3	1.574	1.637	1.542	1.602	3	1.615	1.312	1.333	1.250	1.127	
4	1.821	1.650	1.489	1.581	4	1.706	1.386	1.301	1.235	0.903	
5	1.426	1.439	1.313	1.384	5	1.289	1.200	1.127	1.212	0.793	
6	1.270	1.372	1.264	1.236	6	1.056	1.067	1.090	1.121	0.677	
7	1.116	1.101	1.120	1.049	7	1.001	0.973	0.914	1.008	0.645	
8	1.017	1.057	1.159	1.122	8	0.901	1.041	1.033	0.991	0.487	
9	0.805	0.883	0.878	0.814	9	0.873	0.872	0.857	0.793	0.422	
10	0.543	0.720	0.775	0.736	10	0.706	0.843	0.811	0.800	0.232	
11	0.414	0.540	0.632	0.556	11	0.587	0.608	0.686	0.719	0.352	
12	0.305	0.404	0.353	0.396	12	0.505	0.583	0.473	0.552	0.371	
13	0.171	0.184	0.276	0.241	13	0.354	0.420	0.433	0.379	0.255	
14	0.228	0.203	0.248	0.189	14	0.355	0.312	0.358	0.325	0.309	
15	0.103	0.161	0.211	0.147	15	0.246	0.383	0.349	0.327	0.148	
16	0.104	0.140	0.209	0.134	16	0.258	0.310	0.364	0.309		
17	0.089	0.133	0.133	0.199	17	0.190	0.316	0.269	0.344		
18	0.000	0.115	0.123	0.097	18	0.130	0.223	0.257	0.225		
19	0.019	-	0.006	0.099	19	0.000	0.019	0.130	0.256		
c_n	0.730	0.746	0.759	0.725	0.628	c_n	0.768	0.756	0.745	0.727	0.670
c_m	.0032	-	-.0253	-.0520	-.0294	c_m	-.0395	-.0701	-.0775	-.0727	-.0665
	$C_N' = 0.703$	$x'_{cp} = 28.0$					$C_N' = 0.713$	$x'_{cp} = 33.5$			
	$C_m' = -.0210$	$y'_{cp} = 42.2$					$C_m' = -.0607$	$y'_{cp} = 42.1$			
	$C_b' = .296$						$C_b' = .301$				

TABLE XV.- Concluded.

$$\left[M \approx 0.71; \delta_F = 7^\circ \pm 1.5^\circ \right]$$

(q) $M = 0.71$ $\alpha = 14.7^\circ$
 $C_{NA} = 0.69$ $\delta_{AL} = 0.8^\circ$ down
 $\delta_F = 6.4^\circ$

(r) $M = 0.70$ $\alpha = 16.4^\circ$
 $C_{NA} = 0.66$ $\delta_{AL} = 0.6^\circ$ up
 $\delta_F = 6.7^\circ$

Orifice	Row					Row					
	1	2	3	4	5						
1	2.396	1.589	1.630	1.460	1.057	1	1.873	1.222	1.270	1.241	1.427
2	1.970	1.624	1.416	1.397	1.077	2	1.499	1.239	1.028	1.162	1.394
3	1.675	1.521	1.441	1.344	0.937	3	1.368	1.123	1.053	1.111	1.244
4	1.756	1.520	1.370	1.370	0.820	4	1.407	1.145	0.918	1.119	0.991
5	1.396	1.408	1.193	1.303	0.696	5	1.217	1.034	0.925	1.038	0.742
6	1.159	1.339	1.146	1.098	0.696	6	0.900	1.037	0.887	0.967	0.693
7	1.129	1.101	1.081	0.958	0.634	7	0.858	0.763	0.832	0.864	0.550
8	1.015	1.055	1.009	1.017	0.484	8	0.794	0.895	0.802	0.869	0.459
9	0.915	0.923	0.858	0.833	0.428	9	0.790	0.743	0.727	0.712	0.373
10	0.744	0.864	0.831	0.772	0.314	10	0.637	0.773	0.683	0.641	0.228
11	0.636	0.718	0.754	0.698	0.397	11	0.530	0.557	0.643	0.624	0.361
12	0.492	0.640	0.498	0.550	0.386	12	0.430	0.556	0.444	0.526	0.290
13	0.323	0.425	0.497	0.364	0.364	13	0.327	0.389	0.443	0.378	0.406
14	0.321	0.326	0.417	0.416	0.304	14	0.343	0.379	0.412	0.283	0.287
15	0.269	0.350	0.383	0.322	0.231	15	0.330	0.392	0.407	0.284	0.253
16	0.300	0.267	0.388	0.274	0.16	16	0.391	0.375	0.450	0.336	
17	0.253	0.330	0.322	0.358	0.17	17	0.276	0.363	0.354	0.371	
18	0.217	0.226	0.319	0.248	0.18	18	0.228	0.308	0.351	0.270	
19	0.000	-0.019	0.191	0.229	0.19	19	0.010	-0.020	0.112	0.222	
c_n	0.808	0.814	0.779	0.748	0.626	c_n	0.683	0.684	0.639	0.649	0.680
c_m	-0.0453	-0.0676	-0.0856	-0.0719	-0.0830	c_m	-0.0557	-0.0797	-0.0907	-0.0700	-0.0637
$C_{N'}^1$	0.744	$x_{cp}^1 = 33.1$				$C_{N'}^1 = 0.655$	$x_{cp}^1 = 35.8$				
$C_{m'}^1$	-0.0604	$y_{cp}^1 = 41.3$				$C_{m'}^1 = -0.0597$	$y_{cp}^1 = 42.7$				
$C_{b'}^1$	0.277					$C_{b'}^1 = 0.275$					

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TABLE XVI
PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE DOUGLAS X-3 WING

$$[M \approx 0.76; \delta_f = 7^\circ \pm 1.5^\circ]$$

$$(a) M = 0.74 \quad \alpha = 2.8^\circ \quad \delta_{AL} = 0^\circ \quad \delta_f = 8.0^\circ \\ C_{NA} = 0.01$$

Orifice	Row				
	1	2	3	4	5
1	-0.128	-0.098	0.000	-0.077	-0.127
2	-0.039	0.076	-0.092	0.013	0.000
3	0.051	0.178	0.077	0.089	0.154
4	0.120	0.321	0.153	0.143	0.542
5	0.342	0.472	0.451	0.312	0.234
6	0.216	0.311	0.388	0.420	0.181
7	0.253	0.204	0.282	0.357	0.049
8	0.139	0.260	0.365	0.312	0.019
9	0.162	0.137	0.226	0.147	-0.078
10	0.085	0.147	0.116	0.117	-0.029
11	0.101	0.073	0.156	0.060	-0.010
12	0.038	0.098	0.039	0.038	-0.010
13	0.044	0.020	0.049	-0.010	-0.019
14	0.126	0.069	0.081	0.010	-0.000
15	0.010	0.000	0.010	-0.060	-0.010
16	0.010	0.009	0.048	-0.029	0.010
17	0.030	0.048	0.029	0.019	0.017
18	-0.009	0.049	0.029	-0.059	0.018
19	0.019	0.019	0.081	0.060	0.019

Orifice	Row				
	1	2	3	4	5
1	-0.013	0.024	0.102	0.025	-0.063
2	0.039	0.178	-0.039	0.077	0.076
3	0.114	0.191	0.166	0.140	0.191
4	0.187	0.384	0.229	0.246	0.540
5	0.404	0.484	0.512	0.312	0.234
6	0.317	0.349	0.462	0.495	0.190
7	0.227	0.255	0.346	0.394	0.059
8	0.227	0.298	0.339	0.363	0.029
9	0.182	0.146	0.236	0.175	-0.068
10	0.112	0.176	0.135	0.126	-0.039
11	0.080	0.073	0.166	0.079	-0.020
12	0.104	0.117	0.087	0.048	-0.020
13	0.061	0.039	0.029	0.000	-0.019
14	0.126	0.069	0.090	0.038	-0.010
15	0.029	0.019	0.000	-0.050	0.040
16	0.029	0.019	0.029	-0.019	0.019
17	0.010	0.058	0.029	0.029	0.029
18	-0.028	0.039	0.038	-0.039	0.039
19	0.019	0.029	0.060	0.060	0.060

Orifice	Row				
	1	2	3	4	5
c _n	0.090	0.138	0.141	0.109	0.068
c _m	-0.0106	-0.0107	-0.0156	-0.0099	.0031
C _{N'}	0.114	x _{1 CP} = 20.9	0.164	0.140	0.083
C _{M'}	-0.0068	y _{1 CP} = 40.3	-0.0117	-0.0154	-.0027
C _{b'}	.046	C _{b'} = .057			.0028
		x _{1 CP} = 30.0			
		y _{1 CP} = 40.2			

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TABLE XVI.- Continued.

 $M \approx 0.76; \delta_T = 7^\circ \pm 1.5^\circ$

(c) $M = 0.74$
 $c_{NA} = 0.11$

$\alpha = 3.7^\circ$
 $\delta_{BL} = 0^\circ$
 $\delta_T = 7.8^\circ$

(d) $M = 0.75$
 $c_{NA} = 0.16$

$\alpha = 4.4^\circ$
 $\delta_{BL} = 0.1^\circ$ down
 $\delta_T = 7.6^\circ$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.179	0.194	0.203	0.076	1	0.355	0.397	0.530	0.542	0.226	
2	•183	•254	•105	•257	2	•401	•428	•247	•382	•249	
3	•203	•355	•294	•267	3	•365	•490	•418	•441	•316	
4	•346	•435	•280	•311	4	•488	•545	•403	•423	•591	
5	•541	•597	•598	•373	5	•649	•680	•692	•506	•299	
6	•354	•439	•211	•608	6	•439	•499	•617	•716	•225	
7	•315	•292	•422	•418	7	•387	•340	•519	•515	•117	
8	•264	•336	•426	•479	8	•287	•397	•496	•513	•029	
9	•232	•295	•255	•243	9	•280	•261	•291	•222	•019	
10	•140	•224	•173	•136	10	•176	•261	•200	•192	•019	
11	•130	•119	•165	•129	11	•149	•100	•183	•108	•049	
12	•075	•127	•058	•048	12	•084	•165	•115	•085	•010	
13	•069	•079	•087	•010	13	•095	•058	•067	•029	•000	
14	•125	•059	•090	•019	14	•115	•097	•089	•038	•000	
15	•029	•048	•000	•040	15	•000	•000	•000	•030	•000	
16	•019	•019	•039	•049	16	•038	•047	•086	•010		
17	•030	•068	•019	•019	17	•020	•048	•029	•019		
18	- •019	•029	•019	•079	18	- •028	•039	•038	- •059		
19	•010	•019	•030	•089	19	•009	•038	•050	•059		
c_n	0.169	0.206	0.194	0.183	0.116	c_n	0.213	0.253	0.252	0.236	0.149
c_m	- .0083	- .0110	- .0125	.0022	.0023	c_m	- .0050	- .0109	- .0147	.0022	.0011

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.355	0.397	0.530	0.542	0.226	2	•401	•428	•382	•249	
2	•428	•247	•382	•249		3	•365	•490	•418	•441	
3	•365	•490	•418	•441		4	•488	•545	•403	•423	
4	•488	•545	•403	•423		5	•649	•680	•692	•506	
5	•649	•680	•692	•506		6	•439	•499	•617	•716	
6	•439	•499	•617	•716		7	•387	•340	•519	•515	
7	•387	•340	•519	•515		8	•287	•397	•496	•513	
8	•287	•397	•496	•513		9	•280	•261	•291	•222	
9	•280	•261	•291	•222		10	•176	•261	•200	•192	
10	•176	•261	•200	•192		11	•149	•100	•183	•108	
11	•149	•100	•183	•108		12	•084	•165	•115	•085	
12	•084	•165	•115	•085		13	•095	•058	•067	•029	
13	•095	•058	•067	•029		14	•115	•097	•089	•038	
14	•115	•097	•089	•038		15	•000	•000	•000	•000	
15	•000	•000	•000	•000		16	•038	•047	•086	•010	
16	•038	•047	•086	•010		17	•020	•048	•029	•019	
17	•020	•048	•029	•019		18	- •028	•039	•038	- •059	
18	- •028	•039	•038	- •059		19	•009	•038	•050	•059	
c_n	0.213	0.253	0.252	0.236	0.149	c_m	- .0050	- .0109	- .0147	.0022	.0011
c_m	- .0050	- .0109	- .0147	.0022	.0011	c_n'	0.225	$x'_m c_p = 27.8$	$x'_n c_p = 27.1$		
						c_m'	- .0046				
						c_b'	.093	$y'_m c_p = 41.1$			

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TABLE XVI.- Continued.

$$[M \approx 0.76; \delta_f = 7^\circ \pm 1.5^\circ]$$

(e) $M = 0.75$
 $c_{NA} = 0.19$
 $\alpha = 4.9^\circ$
 $\delta_{aL} = 0^\circ$
 $\delta_f = 7.5^\circ$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.494	0.709	0.912	0.919	0.313	1	0.765	1.309	1.424	1.346	0.731
2	•504	•490	•364	•522	•336	2	•729	•896	•837	•007	•542
3	•490	•515	•494	•478	•379	3	•659	•622	•626	•797	•425
4	•606	•608	•466	•539	•656	4	•783	•639	•573	•609	•621
5	•686	•718	•753	•567	•318	5	•803	•797	•794	•610	•401
6	•526	•601	•691	•778	•253	6	•607	•620	•733	•795	•250
7	•424	•403	•544	•565	•107	7	•457	•461	•614	•609	•164
8	•374	•461	•521	•500	•057	8	•432	•457	•614	•559	•038
9	•300	•290	•310	•270	-	9	•356	•325	•355	•286	•038
10	•204	•222	•247	•192	-	10	•193	•287	•235	•247	-
11	•159	•163	•212	•147	•039	11	•196	•170	•229	•146	•097
12	•112	•135	•086	•123	•000	12	•120	•182	•067	•103	•019
13	•086	•097	•096	•000	•000	13	•111	•087	•123	•038	-
14	•143	•097	•098	•067	-	14	•151	•096	•071	•028	•038
15	•019	•048	•010	-	•069	15	•028	•047	•038	-	•029
16	•048	•019	•048	•000	•000	16	•047	•019	•028	-	•038
17	-	•010	•096	•010	•010	17	•000	•057	•028	-	•019
18	-	•009	•029	•028	-	18	-	•009	•048	•009	-
19	•028	•038	•030	•020	•020	19	•019	•028	•039	•068	
c_n	0.256	0.283	0.286	0.275	0.173	c_m	0.306	0.339	0.337	0.324	0.231
c_m	- .0066	- .0072	- .0088	.0040	.0031	c_m	- .0027	- .0028	.0003	.0141	.0033
$c_{N'}^1$	0.258	$x'_{cp} = 25.7$		$y'_{cp} = 41.2$		$c_{N'}^1 = 0.308$	$x'_{cp} = 23.6$				
$c_{m'}^1$	= -.0017					$c_{m'}^1 = .0043$	$y'_{cp} = 41.5$				
$c_{b'}^1$	= .106					$c_{b'}^1 = .128$					

(f) $M = 0.75$
 $c_{NA} = 0.24$
 $\alpha = 5.6^\circ$
 $\delta_{aL} = 0.1^\circ$ down
 $\delta_f = 7.3^\circ$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.765	1.309	1.424	1.346	0.731	2	0.896	0.837	1.007	0.542	
3	•659	•622	•626	•797	•425	4	•783	•639	•573	•609	•621
5	•803	•797	•794	•610	•401	6	•607	•620	•733	•795	•250
8	•432	•457	•461	•614	•164	9	•356	•325	•355	•559	•038
10	•193	•287	•235	•247	-	11	•196	•170	•229	•146	•097
12	•120	•182	•182	•103	-	13	•111	•087	•123	•038	•019
14	•151	•096	•096	•028	-	15	•151	•096	•071	•028	•038
16	•028	•047	•047	•039	-	17	•028	•047	•019	•028	-
18	•000	•057	•057	•019	-	19	•019	•028	•039	•068	
c_n	0.306	0.339	0.337	0.324	0.231	c_m	- .0027	- .0028	.0003	.0141	.0033
c_m	- .0066	- .0072	- .0088	.0040	.0031	c_m	- .0027	- .0028	.0003	.0141	.0033
$c_{N'}^1$	0.308	$x'_{cp} = 23.6$				$c_{N'}^1 = 0.308$	$x'_{cp} = 23.6$				
$c_{m'}^1$	= .0043					$c_{m'}^1 = .0043$					
$c_{b'}^1$	= .128					$c_{b'}^1 = .128$					

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TABLE XVI.- Continued.

$$\left[M \approx 0.76; \delta_f = 7^\circ \pm 1.5^\circ \right]$$

(g) $M = 0.75$ $\alpha = 6.4^\circ$
 $c_{NA} = 0.31$ $\delta_{aL} = 0.1^\circ$ down
 $\delta_f = 7.0^\circ$

(h) $M = 0.76$ $\alpha = 7.0^\circ$
 $c_{NA} = 0.36$ $\delta_{aL} = 0.1^\circ$ down
 $\delta_f = 7.0^\circ$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.051	1.686	1.857	1.666	1.175	1	1.224	2.003	2.152	2.147	1.383
2	1.110	1.403	1.324	1.470	1.021	2	1.503	1.735	1.539	1.894	1.326
3	0.894	0.919	1.025	1.281	0.499	3	1.066	1.289	1.310	1.092	0.771
4	0.976	0.776	0.709	0.988	0.557	4	1.247	0.949	0.881	0.860	0.637
5	0.887	0.883	0.841	0.791	0.409	5	0.984	0.956	0.949	0.765	0.446
6	0.681	0.694	0.766	0.781	0.315	6	0.778	0.756	0.828	0.904	0.305
7	0.518	0.518	0.535	0.675	0.620	7	0.652	0.571	0.711	0.644	0.240
8	0.468	0.519	0.600	0.608	0.075	8	0.541	0.556	0.673	0.670	0.094
9	0.365	0.381	0.393	0.324	0.019	9	0.414	0.419	0.430	0.380	0.085
10	0.265	0.315	0.254	0.256	0.000	10	0.283	0.352	0.319	0.227	0.000
11	0.186	0.161	0.247	0.174	0.358	11	0.215	0.232	0.285	0.213	0.077
12	0.184	0.210	0.104	0.094	0.029	12	0.174	0.219	0.104	0.168	0.029
13	0.119	0.106	0.114	0.057	0.009	13	0.144	0.105	0.132	0.048	0.037
14	0.160	0.086	0.088	0.019	0.019	14	0.113	0.086	0.070	0.056	0.009
15	0.037	0.037	0.038	-	0.029	0.010	0.065	0.047	0.057	-	0.039
16	0.036	0.036	0.055	0.038	-	0.029	0.028	0.046	0.047	0.000	0.028
17	-	0.020	0.047	0.028	0.038	0.010	0.010	0.057	0.038	-	0.028
18	-	0.018	0.057	0.000	-	0.048	0.000	0.038	-	0.009	-
19	-	0.019	0.019	0.086	0.068	0.009	0.009	0.038	-	0.049	0.048
c_n	0.368	0.405	0.393	0.391	0.291	c_n	0.431	0.461	0.457	0.439	0.370
c_m	.0008	.0020	.0042	.0218	.0114	c_m	.0072	.0074	.0082	.0225	.0097
c_b'	0.370	0.097	$x'_{cp} = 22.4$	$y'_{cp} = 41.4$		$c_{N'}^i$	0.426	$x'_{cp} = 21.8$			
c_b'	0.154					$c_{m'}^i$.0135	$y'_{cp} = 42.0$			
c_b'						$c_{b'}^i$.179				

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TABLE XVI.- Continued.

 $[M \approx 0.76; \delta_F = 7^\circ \pm 1.5^\circ]$

(1) $M = 0.76$
 $c_{NA} = 0.40$
 $\alpha = 7.6^\circ$
 $q_{AL} = 0.6^\circ$ down
 $\delta_F = 6.9^\circ$

(2) $M = 0.76$
 $c_{NA} = 0.45$
 $\alpha = 8.2^\circ$
 $q_{AL} = 0.5^\circ$ down
 $\delta_F = 6.8^\circ$

Orifice	Row					Row				
	1	2	3	4	5					
1	1.418	2.320	2.447	2.454	1.643	1.561	2.435	2.519	2.478	1.962
2	1.707	2.038	1.883	2.001	1.442	1.802	1.126	2.001	2.151	1.832
3	1.286	1.358	1.758	1.882	.816	1.453	1.681	1.886	1.912	1.856
4	1.411	1.051	1.445	1.596	.615	1.561	1.283	1.612	1.813	1.618
5	1.059	1.069	.981	.927	.437	1.311	1.275	1.144	1.401	1.479
6	.834	.789	.798	.872	.335	.969	.867	.955	.935	.340
7	.650	.607	.696	.630	.235	.703	.613	.665	.720	.288
8	.578	.556	.658	.668	.129	.584	.600	.628	.747	.127
9	.453	.400	.431	.372	.101	.439	.415	.436	.387	.082
10	.304	.391	.312	.306	.102	.327	.387	.327	.275	.101
11	.220	.210	.288	.189	.113	.246	.216	.294	.262	.158
12	.180	.261	.158	.183	.056	.12	.187	.240	.110	.208
13	.116	.103	.129	.075	.064	.13	.123	.111	.128	.065
14	.157	.151	.120	.129	.019	.14	.164	.130	.111	.100
15	.046	.028	.037	.019	.019	.15	.027	.046	-.028	.047
16	.053	.054	.083	.000	.000	.16	.073	.045	.055	.028
17	.000	.028	.018	.028	-.018	.17	.019	.055	.027	.055
18	.009	.037	.018	-.028	.028	.18	-.009	.046	.009	-.028
19	-.009	.028	.006	.028	.028	.19	.036	.046	.038	.047

Orifice	Row					Row			
	1	2	3	4	5				
1	1.561	2.435	2.519	2.478	1.962	1.514	0.551	0.568	0.456
2	1.802	1.126	2.001	2.151	1.832	0.514	0.546	0.551	0.568
3	1.453	1.681	1.886	1.912	1.856	0.119	.0147	.0182	.0296
4	1.561	1.283	1.612	1.813	1.618				
5	1.311	1.275	1.144	1.401	1.479				

$c_N' = 0.480$
 $c_m' = .0153$
 $c_b' = .204$

$x'_{cp} = 21.8$
 $y'_{cp} = 42.6$

$c_N' = 0.520$
 $c_m' = .0196$
 $c_b' = .222$

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TABLE XVI.-- Continued.

 $[M \approx 0.76; \delta_f = 7^\circ \pm 1.5^\circ]$

(k) $M = 0.76$
 $c_{NA} = 0.50$
 $\alpha = 8.7^\circ$
 $\delta_{AL} = 0.2^\circ$ down
 $\delta_f = 6.7^\circ$

(l) $M = 0.76$
 $c_{NA} = 0.55$
 $\alpha = 9.4^\circ$
 $\delta_{AL} = 0.6^\circ$ down
 $\delta_f = 6.6^\circ$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.700	2.471	2.582	2.528	2.002	1	1.963	2.551	2.690	2.542	1.811
2	1.967	2.237	2.092	2.131	1.790	2	2.123	2.325	2.162	2.150	1.754
3	1.543	1.950	1.963	1.977	1.045	3	1.747	2.113	2.068	1.950	1.304
4	1.681	1.519	1.689	1.782	0.774	4	1.819	1.749	1.832	1.879	0.880
5	1.306	1.450	1.234	1.501	0.50	5	1.535	1.726	1.298	1.528	0.661
6	1.156	0.912	1.140	1.099	0.401	6	1.353	1.104	1.194	1.238	0.510
7	0.772	0.647	0.903	0.956	0.296	7	0.949	0.757	1.034	1.097	0.347
8	0.653	0.598	0.732	0.916	0.118	8	0.691	0.614	0.932	1.072	0.179
9	0.476	0.413	0.452	0.477	0.109	9	0.545	0.462	0.610	0.660	0.117
10	0.317	0.404	0.344	0.302	0.037	10	0.322	0.426	0.411	0.415	0.063
11	0.245	0.215	0.321	0.187	0.158	11	0.279	0.263	0.326	0.286	0.137
12	0.222	0.258	0.137	0.144	0.037	12	0.201	0.264	0.126	0.169	0.055
13	0.131	0.120	0.120	0.046	0.072	13	0.145	0.110	0.126	0.055	0.115
14	0.127	0.129	0.093	0.018	0.029	14	0.135	0.146	0.084	0.045	0.054
15	0.036	0.045	0.046	-	0.056	0.030	0.089	0.045	0.063	-	0.037
16	0.072	0.062	0.054	0.000	0.000	15	0.036	0.079	0.045	0.036	0.036
17	0.000	0.045	0.027	0.013	0.000	16	0.056	0.072	0.036	0.018	0.018
18	0.009	0.055	0.045	-	0.046	17	-	0.017	0.055	0.045	0.018
19	0.036	0.018	0.085	0.047	0.000	18	0.027	0.018	0.065	0.018	0.018
c_n	0.556	0.583	0.599	0.592	0.493	c_n	0.610	0.643	0.660	0.665	0.557
c_m	.0148	.0171	.0169	.0379	.0126	c_m	.0206	.0189	.0168	.0268	.0052

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.963	2.551	2.690	2.542	1.811	2	2.123	2.325	2.162	2.150	1.754
2	2.123	2.325	2.162	2.150	1.754	3	1.747	2.113	2.068	1.950	1.304
3	1.747	2.113	2.068	1.950	1.304	4	1.819	1.749	1.832	1.879	0.880
4	1.819	1.749	1.832	1.879	0.880	5	1.535	1.726	1.298	1.528	0.661
5	1.535	1.726	1.298	1.528	0.661	6	1.353	1.104	1.194	1.238	0.510
6	1.353	1.104	1.194	1.238	0.510	7	0.949	0.757	1.034	1.097	0.347
7	0.949	0.757	1.034	1.097	0.347	8	0.691	0.614	0.932	1.072	0.179
8	0.691	0.614	0.932	1.072	0.179	9	0.545	0.462	0.610	0.660	0.117
9	0.545	0.462	0.610	0.660	0.117	10	0.322	0.426	0.411	0.415	0.063
10	0.322	0.426	0.411	0.415	0.063	11	0.279	0.263	0.326	0.286	0.137
11	0.279	0.263	0.326	0.286	0.137	12	0.201	0.264	0.126	0.169	0.055
12	0.201	0.264	0.126	0.169	0.055	13	0.145	0.110	0.126	0.055	0.115
13	0.145	0.110	0.126	0.055	0.115	14	0.135	0.146	0.084	0.045	0.054
14	0.135	0.146	0.084	0.045	0.054	15	0.089	0.045	0.063	-	0.037
15	0.089	0.045	0.063	-	0.037	16	0.036	0.079	0.045	0.036	0.036
16	0.036	0.079	0.045	0.036	0.036	17	0.056	0.072	0.036	0.018	0.018
17	0.056	0.072	0.036	0.018	0.018	18	-	0.017	0.055	0.045	0.018
18	-	0.017	0.055	0.045	0.018	19	0.027	0.018	0.065	0.018	0.018
c_n	0.610	0.643	0.660	0.665	0.557	c_n	0.610	0.643	0.660	0.665	0.557
c_m	.0206	.0189	.0168	.0268	.0052	c_m	.0206	.0189	.0168	.0268	.0052

$c_{N^I} = 0.555$ $x'_{ep} = 20.9$ $x'_{ep} = 21.5$
 $c_m^I = .0230$ $y'_{ep} = 42.6$ $y'_{ep} = 42.9$
 $c_b^I = .236$ $c_b^I = .264$

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TABLE XVI.- Continued.

$$\left[M \approx 0.76; \delta_f = 7^\circ \pm 1.5^\circ \right]$$

(m) $M = 0.76$
 $c_{NA} = 0.59$

$\alpha = 9.9^\circ$
 $c_{BL} = 0.6$
 $\delta_f = 6.5^\circ$

Orifice	Row				
	1	2	3	4	5
1	2.173	2.767	2.442	1.878	1
2	2.228	2.380	2.219	2.182	2
3	1.903	2.180	2.100	1.982	3
4	1.902	1.876	1.723	1.875	4
5	1.590	1.664	1.527	1.559	5
6	1.421	1.090	1.226	1.306	6
7	1.224	0.902	0.973	1.130	7
8	0.702	0.769	0.884	1.130	8
9	0.515	0.525	0.664	0.749	9
10	0.391	0.434	0.490	0.549	-
11	0.270	0.263	0.424	0.414	•11.9
12	0.209	0.254	0.135	0.205	•10.0
13	0.145	0.109	0.108	0.091	•0.53
14	0.161	0.127	0.084	0.036	•0.90
15	0.053	0.045	0.045	0.072	-
16	0.053	0.079	0.036	0.009	•0.09
17	0.047	0.045	0.018	0.027	•0.018
18	-	0.009	0.036	0.027	-
19	0.035	0.045	0.084	0.064	-

Orifice	Row				
	1	2	3	4	5
1	2.393	1.951	1.863	1.582	1.734
2	2.345	1.925	1.706	1.528	1.702
3	1.844	1.775	1.659	1.408	1.285
4	1.897	1.754	1.501	1.447	0.885
5	1.567	1.512	1.336	1.322	0.750
6	1.218	1.313	1.200	1.140	0.541
7	1.007	1.051	1.056	1.002	0.455
8	0.904	0.869	1.001	1.011	0.253
9	0.706	0.735	0.827	0.715	0.210
10	0.501	0.646	0.706	0.564	0.150
11	0.337	0.481	0.601	0.495	0.215
12	0.307	0.373	0.326	0.365	0.170
13	0.166	0.178	0.290	0.195	0.173
14	0.245	0.169	0.212	0.166	0.150
15	0.061	0.140	0.151	0.118	0.072
16	0.148	0.163	0.201	0.133	-
17	0.091	0.149	0.114	0.183	-
18	-	0.017	0.115	0.139	0.098
19	0.069	-	0.009	0.082	0.126

Orifice	Row				
	1	2	3	4	5
c_n	0.642	0.670	0.675	0.697	0.584
c_m	.0212	.0215	.0139	.0245	.0076
c_b	.0642	.0221	.0215	.0139	.0076
c_n'	0.646	x'cp = 21.6	c_m'	0.666	x'cp = 26.7
c_m'	.0221	y'cp = 42.9	c_b'	-.0113	y'cp = 41.6
c_b'	.0275			.277	

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TABLE XVI.- Concluded.

(o) $M = 0.76$
 $c_{NA} = 0.70$

$\alpha = 11.7^\circ$
 $\delta_{AL} = 1.2^\circ$ down
 $\delta_T = 6.8^\circ$

(p) $M = 0.76$
 $c_{NA} = 0.72$

$\alpha = 13.5^\circ$
 $\delta_{AL} = 0.1^\circ$ down
 $\delta_T = 7.0^\circ$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	2.453	1.611	1.676	1.467	1.736	1	2.462	1.442	1.525	1.557	1.351
2	2.276	1.604	1.552	1.436	1.657	2	1.838	1.496	1.311	1.479	1.297
3	1.696	1.477	1.661	1.352	1.332	3	1.730	1.333	1.342	1.428	1.138
4	1.754	1.558	1.444	1.389	1.980	4	1.728	1.378	1.300	1.360	1.758
5	1.363	1.387	1.348	1.312	1.822	5	1.334	1.264	1.159	1.249	1.699
6	1.184	1.408	1.223	1.164	1.688	6	1.072	1.201	1.125	1.016	1.636
7	1.088	1.040	1.162	1.049	1.581	7	1.056	1.007	0.989	0.934	0.570
8	1.076	1.117	1.070	1.012	1.349	8	0.940	1.025	0.981	0.942	0.381
9	0.936	0.921	0.864	0.813	0.307	9	0.930	0.898	0.884	0.815	0.373
10	0.723	0.824	0.768	0.706	0.256	10	0.775	0.817	0.831	0.778	0.197
11	0.592	0.631	0.628	0.630	0.331	11	0.646	0.690	0.725	0.721	0.354
12	0.427	0.515	0.353	0.488	0.250	12	0.494	0.540	0.509	0.556	0.308
13	0.276	0.268	0.343	0.329	0.233	13	0.352	0.443	0.423	0.374	0.298
14	0.263	0.249	0.262	0.297	0.212	14	0.311	0.343	0.381	0.319	0.314
15	0.147	0.237	0.266	0.209	0.136	15	0.237	0.364	0.341	0.303	0.183
16	0.148	0.232	0.271	0.239	0.16	16	0.248	0.331	0.355	0.287	
17	0.091	0.219	0.194	0.253	0.17	17	0.185	0.311	0.267	0.354	
18	0.060	0.178	0.226	0.170	0.144	18	0.103	0.243	0.274	0.200	
19	0.026	0.018	0.082	0.082	0.144	19	0.000	-0.018	0.111	0.210	
c_n	0.785	0.781	0.750	0.713	0.694	c_n	0.779	0.764	0.751	0.732	0.628
c_m	-0.0202	-0.0490	-0.0534	-0.0528	-0.0417	c_m	-0.0394	-0.0710	-0.0814	-0.0665	-0.0595
	$c_N' = 0.725$	$x'_{cp} = 30.4$	$y'_{cp} = 41.8$				$c_N' = 0.715$	$x'_{cp} = 33.2$			
	$c_m' = -0.0391$						$c_m' = -0.0590$	$y'_{cp} = 41.8$			
	$c_b' = .303$						$c_b' = .299$				

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TABLE XVII
PRESSURE COEFFICIENTS AND AERODYNAMIC CHARACTERISTICS OF THE DOUGLAS X-3 WING
 $[M \approx 0.80; \delta_f = 7^\circ \pm 1.5^\circ]$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
(a) $M = 0.80$ $c_{NA} = 0.00$	$\alpha = 2.6^\circ$ $\delta_{AL} = 0.1^\circ$ up $\delta_f = 8.8^\circ$	$\alpha = 2.6^\circ$ $\delta_{AL} = 0.1^\circ$ up $\delta_f = 8.8^\circ$	$\alpha = 3.1^\circ$ $\delta_{AL} = 0.1^\circ$ up $\delta_f = 8.7^\circ$	$\alpha = 3.1^\circ$ $\delta_{AL} = 0.1^\circ$ up $\delta_f = 8.7^\circ$							
1	-0.268	-0.321	-0.221	-0.406	-0.288	1	-0.104	-0.066	0.035	-0.104	-0.149
2	-1.143	0.000	-0.216	-0.094	-0.115	2	0.024	0.069	-	0.119	0.012
3	-0.058	0.081	-0.035	0.023	0.105	3	0.069	0.195	0.127	0.150	0.127
4	0.049	0.257	0.070	0.059	0.088	4	0.181	0.348	0.161	0.164	0.105
5	0.322	0.452	0.557	0.136	0.266	5	0.445	0.622	0.971	0.270	0.344
6	0.219	0.341	0.409	1.075	0.129	6	0.332	0.374	0.452	1.114	0.163
7	0.172	0.197	0.373	0.312	0.081	7	0.274	0.311	0.417	0.471	0.080
8	0.207	0.236	0.366	0.449	-0.026	8	0.262	0.305	0.397	0.422	0.000
9	0.138	0.133	0.214	0.177	-0.079	9	0.201	0.212	0.240	0.211	-0.044
10	0.102	0.151	0.114	0.089	-0.044	10	0.161	0.185	0.148	0.114	-0.053
11	0.091	0.053	0.098	0.072	-0.027	11	0.073	0.099	0.150	0.090	-0.036
12	0.069	0.080	0.071	0.035	-0.054	12	0.119	0.124	0.070	0.026	-0.045
13	0.040	0.063	0.035	-0.018	-0.017	13	0.055	0.098	0.061	-0.018	0.017
14	0.123	0.089	0.066	-0.009	-0.018	14	0.157	0.089	0.065	0.000	-0.018
15	0.000	0.000	-0.036	-0.091	-0.027	15	-0.035	0.026	-0.018	-0.063	0.009
16	0.009	0.026	0.035	0.000	0.000	16	0.052	0.043	0.009	-0.026	
17	0.009	0.009	0.016	0.000	0.000	17	-0.009	0.026	0.044	0.000	
18	-0.034	0.000	0.009	-0.027	0.027	18	-0.008	0.009	-0.017	0.000	
19	0.000	0.053	0.009	0.027	0.027	19	0.017	0.044	0.036	0.000	
c_n	0.081	0.123	0.121	0.145	0.073	c_n	0.142	0.176	0.166	0.177	0.105
c_m	-0.0128	-0.0126	-0.0147	-0.0039	-0.0046	c_m	-0.0156	-0.0149	-0.0112	-0.0001	-0.0025
c_b'											
$c_{N'}^1$	0.114										
c_m^1	-0.0095										
c_b^1	.050										
x'_{cp}	33.3										
y'_{cp}	43.8										
$c_{N'}^1$	0.158										
c_m^1	-0.0086										
c_b^1	.066										
x'_{cp}	30.5										
y'_{cp}	41.8										

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TABLE XVII.- Continued.

$$[M \approx 0.80; \delta_f = 7^\circ \pm 1.5^\circ]$$

(c) $M = 0.80$
 $c_{NA} = 0.09$
 $\alpha = 3.5^\circ$
 $\delta_{AL} = 0.1^\circ$ up
 $\delta_f = 8.6^\circ$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.023	0.033	0.138	0.069	-0.046	1	0.231	0.220	0.323	0.287	0.103
2	0.083	0.218	-	0.036	0.081	2	0.236	0.333	0.143	0.267	0.159
3	0.149	0.241	0.173	0.230	0.150	3	0.264	0.367	0.301	0.333	0.231
4	0.205	0.416	0.195	0.187	1.095	4	0.397	0.486	0.299	0.363	1.061
5	0.490	0.713	1.105	0.315	0.440	5	0.661	1.092	1.206	1.360	0.537
6	0.423	0.409	0.451	1.147	0.145	6	0.515	0.502	0.676	1.135	0.154
7	0.285	0.345	0.485	0.505	0.080	7	0.376	0.391	0.566	0.917	0.089
8	0.319	0.328	0.431	0.410	-	8	0.387	0.410	0.499	0.504	0.026
9	0.219	0.229	0.248	0.194	-0.044	9	0.338	0.300	0.310	0.246	-0.017
10	0.127	0.212	0.174	0.140	-0.079	10	0.152	0.194	0.182	0.140	-0.079
11	0.127	0.107	0.158	0.090	-0.027	11	0.118	0.116	0.116	0.158	0.009
12	0.077	0.150	0.088	0.061	-0.036	12	0.119	0.106	0.106	0.061	-0.071
13	0.076	0.080	0.070	0.000	0.017	13	0.071	0.071	0.079	-0.018	0.026
14	0.122	0.062	0.073	0.009	-0.018	14	0.113	0.097	0.073	-0.026	-0.026
15	-	0.017	-0.061	0.009	-0.090	15	0.017	0.035	0.035	-0.072	-0.027
16	-	0.009	0.043	0.035	-0.026	16	-	0.009	0.017	0.026	0.009
17	-	0.009	0.009	0.044	-0.009	17	-	0.018	0.079	0.035	-0.009
18	-	0.017	-0.009	0.000	-0.009	18	0.000	0.009	0.000	-0.009	0.009
19	-	0.026	0.044	0.009	0.018	19	0.000	0.061	0.009	0.009	0.009
c_n	0.153	0.198	0.193	0.196	0.124	c_n	0.212	0.250	0.238	0.236	0.163
c_m	-0.0108	-0.0100	-0.0134	-0.0007	.0048	c_m	-0.0078	-0.0084	-0.0092	.0045	.0030

(d) $M = 0.80$
 $c_{NA} = 0.15$
 $\alpha = 4.2^\circ$
 $\delta_{AL} = 0.1^\circ$ up
 $\delta_f = 8.2^\circ$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.231	0.220	0.323	0.287	0.103	2	0.236	0.333	0.143	0.267	0.159
3	0.264	0.367	0.301	0.333	0.231	5	0.397	0.486	0.299	0.363	1.061
4	0.397	0.486	0.299	0.363	1.061	6	0.661	1.092	1.206	1.360	0.537
5	0.661	1.092	1.206	1.360	0.537	7	0.515	0.502	0.676	1.135	0.154
6	0.515	0.502	0.676	1.135	0.154	8	0.376	0.391	0.566	0.917	0.089
7	0.376	0.391	0.566	0.917	0.089	9	0.387	0.410	0.499	0.504	0.026
9	0.387	0.410	0.499	0.504	0.026	10	0.338	0.300	0.310	0.246	-0.017
10	0.338	0.300	0.310	0.246	-0.017	11	0.152	0.194	0.182	0.140	-0.079
11	0.152	0.194	0.182	0.140	-0.079	12	0.118	0.116	0.116	0.108	0.009
12	0.118	0.116	0.116	0.108	0.009	13	0.119	0.106	0.106	0.061	-0.071
13	0.119	0.106	0.106	0.061	-0.071	14	0.071	0.071	0.079	-0.018	0.026
14	0.071	0.071	0.079	-0.018	0.026	15	0.097	0.073	-0.026	-0.026	-0.026
15	0.097	0.073	-0.026	-0.026	-0.026	16	0.017	0.035	-0.072	-0.072	-0.027
16	0.017	0.035	-0.072	-0.072	-0.027	17	-	0.009	0.017	0.026	0.009
17	-	0.009	0.017	0.026	0.009	18	0.018	-0.018	0.035	-0.009	0.009
18	0.018	-0.018	0.035	-0.009	0.009	19	0.000	0.000	0.000	-0.009	0.009
c_n	0.212	0.250	0.238	0.236	0.163	c_m	-0.0078	-0.0084	-0.0092	.0045	.0030

(e) $M = 0.80$
 $c_{NA} = 0.09$
 $\alpha = 3.5^\circ$
 $\delta_{AL} = 0.1^\circ$ up
 $\delta_f = 8.6^\circ$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.231	0.220	0.323	0.287	0.103	2	0.236	0.333	0.143	0.267	0.159
3	0.264	0.367	0.301	0.333	0.231	5	0.397	0.486	0.299	0.363	1.061
4	0.397	0.486	0.299	0.363	1.061	6	0.661	1.092	1.206	1.360	0.537
5	0.661	1.092	1.206	1.360	0.537	7	0.515	0.502	0.676	1.135	0.154
6	0.515	0.502	0.676	1.135	0.154	8	0.376	0.391	0.566	0.917	0.089
7	0.376	0.391	0.566	0.917	0.089	9	0.387	0.410	0.499	0.504	0.026
9	0.387	0.410	0.499	0.504	0.026	10	0.338	0.300	0.310	0.246	-0.017
10	0.338	0.300	0.310	0.246	-0.017	11	0.152	0.194	0.182	0.140	-0.079
11	0.152	0.194	0.182	0.140	-0.079	12	0.118	0.116	0.116	0.108	0.009
12	0.118	0.116	0.116	0.108	0.009	13	0.119	0.106	0.106	0.061	-0.071
13	0.119	0.106	0.106	0.061	-0.071	14	0.071	0.071	0.079	-0.018	0.026
14	0.071	0.071	0.079	-0.018	0.026	15	0.097	0.073	-0.026	-0.026	-0.026
15	0.097	0.073	-0.026	-0.026	-0.026	16	0.017	0.035	-0.072	-0.072	-0.027
16	0.017	0.035	-0.072	-0.072	-0.027	17	-	0.009	0.017	0.026	0.009
17	-	0.009	0.017	0.026	0.009	18	0.018	-0.018	0.035	-0.009	0.009
18	0.018	-0.018	0.035	-0.009	0.009	19	0.000	0.000	0.009	-0.009	0.009
c_n	0.212	0.250	0.238	0.236	0.163	c_m	-0.0078	-0.0084	-0.0092	.0045	.0030

(f) $M = 0.80$
 $c_{NA} = 0.15$
 $\alpha = 4.2^\circ$
 $\delta_{AL} = 0.1^\circ$ up
 $\delta_f = 8.2^\circ$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	0.231	0.220	0.323	0.287	0.103	2	0.236	0.333	0.143	0.267	0.159
3	0.264	0.367	0.301	0.333	0.231	5	0.397	0.486	0.299	0.363	1.061
4	0.397	0.486	0.299	0.363	1.061	6	0.661	1.092	1.206	1.360	0.537
5	0.661	1.092	1.206	1.360	0.537	7	0.515	0.502	0.676	1.135	0.154
6	0.515	0.502	0.676	1.135	0.154	8	0.376	0.391	0.566	0.917	0.089
7	0.376	0.391	0.566	0.917	0.089	9	0.387	0.410	0.499	0.504	0.026
9	0.387	0.410	0.499	0.504	0.026	10	0.338	0.300	0.310	0.246	-0.017
10	0.338	0.300									

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TABLE XVII.- Continued.

$$[\bar{M} \approx 0.80; \delta_f = 7^\circ \pm 1.5^\circ]$$

$$(e) M = 0.80 \quad \alpha = 4.9^\circ \quad \delta_{BL} = 0^\circ \quad \delta_f = 8.1^\circ \\ C_{NA} = 0.21$$

Orifice	Row				
	1	2	3	4	5
1	0.440	0.517	0.704	0.657	0.252
2	•449	•506	•298	•419	•262
3	•483	•506	•463	•461	•312
4	•579	•580	•403	•453	•123
5	•799	1.209	1.231	•485	5
6	•596	•596	1.050	1.149	•154
7	•479	•507	•660	1.068	•125
8	•468	•457	•568	•692	•035
9	•329	•300	•320	•238	-
10	•212	•212	•235	•158	-
11	•172	•141	•185	•153	-
12	•153	•204	•097	•104	-
13	•094	•062	•061	-	•027
14	•157	•089	•090	•000	•009
15	•009	-	•009	-	•081
16	•026	•050	•050	•079	-
17	-	•009	•026	•009	-
18	-	•025	-	•009	•000
19	•017	•061	•018	•018	•009

Orifice	Row				
	1	2	3	4	5
1	0.694	1.020	1.209	1.160	0.503
2	•672	•665	•605	•766	•420
3	•619	•619	•543	•574	•403
4	•734	•624	•528	•573	•077
5	•865	1.206	1.228	•585	1.020
6	•697	•700	1.138	1.168	•188
7	•512	•528	•831	1.100	•124
8	•535	•538	•679	1.030	•052
9	•392	•370	•336	•299	-
10	•237	•236	•295	•167	•000
11	•172	•190	•211	•134	-
12	•161	•168	•114	•095	-
13	•110	•142	•070	•027	•052
14	•166	•115	•073	•009	-
15	•009	•044	•018	-	•009
16	•035	•026	•035	-	•054
17	•018	•044	•017	-	•018
18	-	•034	-	•026	-
19	•000	•087	-	•018	•027

$C_N^1 = 0.281$	$x_1^1 cp = 25.7$
$C_m^1 = -0.0021$	$y_1^1 cp = 41.8$
$C_b^1 = .118$	

$$\begin{aligned} C_N^1 &= 0.336 \\ C_m^1 &= .0016 \\ C_b^1 &= .144 \end{aligned}$$

$$\begin{aligned} x_1^1 cp &= 24.5 \\ y_1^1 cp &= 42.8 \end{aligned}$$

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TABLE XVII.-- Continued.
 $[M \approx 0.80; \delta_f = 7^\circ \pm 1.5^\circ]$

(g) $M = 0.80$ $\alpha = 5.9^\circ$
 $c_{NA} = 0.29$ $\delta_{AL} = 0^\circ$
 $\delta_f = 7.8^\circ$

Orifice	Row				
	1	2	3	4	5
1	0.786	1.272	1.336	1.252	0.708
2	•766	•826	•795	•604	•568
3	•654	•654	•558	•689	•403
4	•866	•670	•563	•620	1.043
5	•945	1.241	1.250	•663	1.011
6	•754	•723	1.126	1.203	•197
7	•535	•563	•970	1.089	•133
8	•535	•549	•713	1.123	•069
9	•374	•361	•354	•272	-
10	•262	•308	•278	•202	-
11	•154	•182	•193	•161	-
12	•178	•168	•123	•087	•000
13	•078	•089	•079	•035	•043
14	•166	•084	•098	•017	-
15	-	•026	•009	-	•009
16	•043	•043	•035	-	•018
17	•009	•017	•000	•009	•000
18	-	•034	•000	-	•018
19	•009	•061	•036	•045	-

Orifice	Row				
	1	2	3	4	5
1	0.935	1.589	1.783	1.767	0.582
2	1.060	•791	•747	•916	•454
3	•779	•756	•611	•665	•460
4	•985	•762	•608	•655	1.111
5	•955	1.297	1.328	•652	1.037
6	•834	•827	1.114	1.282	•256
7	•580	•654	1.119	1.156	•133
8	•626	•561	•780	1.158	•078
9	•428	•396	•354	•316	•009
10	•296	•299	•286	•202	•035
11	•208	•198	•228	•179	•027
12	•178	•212	•114	•095	•009
13	•110	•089	•087	•071	•034
14	•148	•106	•081	•009	•009
15	•009	•000	•026	-	•054
16	•035	•051	•009	•000	•000
17	-	•009	•035	•009	•009
18	-	•034	-	•009	-
19	•000	•035	•036	•027	•027

(h) $M = 0.80$ $\alpha = 6.4^\circ$
 $c_{NA} = 0.32$ $\delta_{AL} = 0.1^\circ$ down
 $\delta_f = 7.6^\circ$

Orifice	Row				
	1	2	3	4	5
1	0.397	0.409	0.420	0.438	0.306
2	•0004	.0016	.0032	.0142	.0008

$C_N' = 0.391$ $x'_{cp} = 23.4$
 $C_m' = .0064$ $y'_{cp} = 42.4$
 $C_b' = .153$

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TABLE XVII.- Continued.

$$[M \approx 0.80; \delta_f = 7^\circ \pm 1.5^\circ]$$

$$(1) \begin{aligned} M &= 0.80 \\ C_{NA} &= 0.36 \\ \alpha &= 7.0^\circ \\ \delta_{AL} &= 0.2^\circ \text{ down} \\ \delta_f &= 7.5^\circ \end{aligned}$$

Orifice	Row				
	1	2	3	4	5
1	1.099	1.796	1.964	1.915	1.389
2	1.306	1.192	1.408	1.582	1.237
3	0.990	*.900	1.257	1.430	1.361
4	1.073	*.816	1.743	1.079	1.023
5	1.094	1.329	1.247	1.728	1.966
6	0.908	0.972	1.138	1.213	1.252
7	0.681	*.856	1.032	1.112	1.183
8	0.681	*.573	1.032	1.044	1.111
9	0.456	*.354	0.365	0.328	0.009
10	0.265	*.328	0.264	0.224	0.043
11	0.222	*.186	0.215	0.193	0.061
12	0.142	*.199	0.129	0.085	0.017
13	0.108	*.061	0.103	0.061	0.059
14	0.162	*.130	0.096	0.017	0.017
15	0.008	*.000	0.017	-	0.009
16	0.026	*.084	0.051	-	0.017
17	0.000	*.017	0.017	*.017	-
18	-	*.017	0.017	-	0.017
19	0.025	*.034	0.018	0.018	-

Orifice	Row				
	1	2	3	4	5
1	1.165	1.975	2.028	2.068	1.565
2	1.499	1.784	1.614	1.715	1.434
3	1.122	1.190	1.424	1.528	1.070
4	1.294	1.950	1.315	1.397	1.004
5	1.181	1.293	1.344	1.188	0.611
6	1.051	1.118	1.267	1.379	0.301
7	0.835	0.933	1.153	1.289	0.191
8	0.858	0.629	1.174	0.813	0.136
9	0.464	0.405	0.381	0.353	0.034
10	0.289	0.310	0.280	0.189	0.086
11	0.195	0.202	0.224	0.193	0.061
12	0.141	0.173	0.137	0.119	0.009
13	0.107	0.095	0.095	0.086	0.084
14	0.154	0.078	0.103	0.034	0.026
15	0.025	0.026	0.009	-	0.044
16	0.025	0.067	0.068	-	0.017
17	-	0.036	0.034	-	0.017
18	0.017	-	0.017	-	0.009
19	-	0.008	0.043	0.035	0.009

Orifice	Row				
	1	2	3	4	5
c _n	0.430	0.458	0.485	0.371	0.489
c _m	.0051	.0042	.0050	.0244	.0092
c _{m'}					
c _{b'}					

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TABLE XVII. - Continued.

(k)	$M = 0.80$	$\alpha = 8.3^\circ$
	$C_{NA} = 0.46$	$\delta_{aL} = 0^\circ$
		$\delta_T = 7.2^\circ$

Office	Row					5.
	1	2	3	4	5.	
1	1.284	2.105	2.153	2.205	1.670	
2	1.711	1.911	1.792	1.855	1.561	
3	1.274	1.542	1.620	1.712	1.256	
4	1.453	1.250	1.444	1.573	1.066	
5	1.264	1.388	1.580	1.315	.719	
6	1.147	1.170	1.536	1.540	.358	
7	.998	1.030	1.305	1.926	.251	
8	.932	1.923	1.257	1.935	.127	
9	.533	1.429	1.483	1.608	.042	
10	.288	1.300	1.254	1.453	.026	
11	.212	1.201	1.214	1.201	.104	
12	.166	1.172	1.103	1.067	.061	
13	.092	1.130	1.102	1.000	.059	
14	.144	.086	.071	-.085	.034	
15	.008	.051	.017	-.070	.026	
16	.059	.050	.059	-.017		
17	.009	.034	.034	-.042		
18	-.016	.034	.008	-.035		
19	-.008	.042	.053	.017		
c _n	0.536	0.576	0.620	0.593	0.509	
c _m	.0113	.0157	.0173	.0364	.0168	
c _b	0.556 0.0212 0.239			$x^{op} = 21.2$ $y^{op} = 43.0$		

(k)	$M = 0.80$	$\alpha = 8.3^\circ$
	$C_{NA} = 0.46$	$\delta_{aL} = 0^\circ$
		$\delta_T = 7.2^\circ$

Orifice	Row					$C_{\text{W}}^1 = 0.580$	$C_{\text{M}}^1 = .0217$	$C_{\text{D}}^1 = .250$
	1	2	3	4	5			
1	1.323	2.117	2.233	2.240	1.718			
2	1.726	1.880	1.819	1.937	1.620			
3	1.346	1.647	1.680	1.771	1.352			
4	1.528	1.401	1.471	1.635	1.028			
5	1.292	1.404	1.617	1.374	.733			
6	1.208	1.210	1.606	1.589	.423			
7	1.038	1.070	1.478	1.922	.284			
8	1.005	1.055	1.164	1.942	.135			
9	.558	.444	.567	.691	.085			
10	.303	.316	.278	.476	.034			
11	.246	.208	.222	.321	.130			
12	.148	.180	.094	.101	.086			
13	.114	.077	.076	.034	.075			
14	.118	.094	.063	-.093	.026			
15	.042	.017	.034	-.096	.026			
16	.034	.050	.025	-.034				
17	.009	.042	.017	.025				
18	-.016	.017	.008	-.052				
19	.025	.042	.044	.052				
	c_{a}	0.558	0.602	0.631	0.625	0.540		
	c_{m}	.0126	.0174	.0200	.0345	.0125		
					$\frac{x^1_{\text{cp}}}{y^1_{\text{cp}}} = \frac{21.3}{43.2}$			

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TABLE XVII.- Continued.

$$\left[M \approx 0.80; \delta_f = 7^\circ \pm 1.5^\circ \right]$$

$$(m) \quad M = 0.80 \quad \alpha = 8.6^\circ \quad \delta_{AL} = 0.2^\circ \text{ down} \quad \delta_f = 7.2^\circ$$

$$C_{NA} = 0.51 \quad C_N = 0.81 \quad C_m = 0.56 \quad C_D = 7.1^\circ$$

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
1	1.342	2.147	2.243	2.260	1.743	1	1.550	2.264	2.377	2.349	1.859
2	1.787	1.981	1.800	1.916	1.625	2	1.985	2.084	1.874	2.010	1.708
3	1.365	1.695	1.717	1.765	1.537	3	1.506	1.833	1.835	1.857	1.380
4	1.558	1.486	1.477	1.662	0.993	4	1.670	1.627	1.574	1.770	.952
5	1.322	1.400	1.621	1.424	1.709	5	1.473	1.595	1.736	1.540	.703
6	1.250	1.253	1.632	1.528	1.459	6	1.305	1.331	1.661	1.504	.512
7	1.081	1.036	1.474	1.474	1.341	7	1.170	1.191	1.329	1.014	.389
8	1.016	1.077	1.206	1.966	1.142	8	1.115	1.157	1.066	1.024	.223
9	1.295	1.507	1.620	1.675	1.092	9	1.651	1.595	1.842	.803	.083
10	1.333	1.321	1.315	1.522	1.059	10	1.338	1.385	1.602	.601	.075
11	1.234	1.230	1.228	1.269	1.128	11	1.276	1.251	1.393	.417	.110
12	1.179	1.186	1.186	1.141	1.077	12	1.210	1.218	1.033	.222	.110
13	1.105	1.102	1.067	1.042	1.091	13	1.104	1.104	1.058	.059	.065
14	1.142	1.068	1.070	-	1.108	14	1.141	1.101	1.054	-	.075
15	1.025	1.042	1.025	-	1.061	15	1.057	1.041	-	1.098	-
16	1.050	1.033	1.042	-	1.051	16	1.050	1.049	1.017	-	.025
17	1.017	1.059	1.017	-	1.008	17	1.009	1.066	1.008	.025	
18	-	1.016	1.008	1.017	-	18	-	1.016	1.025	-	.008
19	-	1.025	1.017	1.061	1.052	19	1.025	1.041	1.078	.043	

Orifice	Row					Orifice	Row				
	1	2	3	4	5		1	2	3	4	5
(n)	M = 0.81	0.81	0.81	0.81	0.81	1	1.550	2.264	2.377	2.349	1.859
	C _{NA} = 0.56					2	1.985	2.084	1.874	2.010	1.708
	$\alpha = 9.4^\circ$					3	1.506	1.833	1.835	1.857	1.380
	$\delta_{AL} = 0.2^\circ$ down					4	1.670	1.627	1.574	1.770	.952
	$\delta_f = 7.1^\circ$					5	1.473	1.595	1.736	1.540	.703

$$C_N = 0.647 \quad C_m = 0.647 \quad C_D = 22.2$$

$$C_{N'} = 0.593 \quad C_{m'} = .0182 \quad C_D' = .277$$

$$x'_{cp} = 21.4 \quad y'_{cp} = 43.0$$

$$C_{N''} = 0.593 \quad C_{m''} = .0214 \quad C_D'' = .255$$

TABLE XVII.- Continued.

 $[M \approx 0.80; \delta_f = 7^\circ \pm 1.5^\circ]$

(o) $M = 0.80$
 $c_{NA} = 0.61$
 $\alpha = 10.2^\circ$
 $\delta_{BL} = 0.2^\circ$ down
 $Q_f = 7.0^\circ$

Orifice	Row					Row
	1	2	3	4	5	
1	1.897	2.400	2.497	2.436	1.973	1
2	2.171	2.179	1.993	2.038	1.788	2
3	1.640	2.003	1.961	1.939	1.414	3
4	1.812	1.786	1.752	1.785	.894	4
5	1.573	1.708	1.535	1.521	.717	5
6	1.437	1.488	1.362	1.308	.566	6
7	1.333	1.223	1.108	1.066	.486	7
8	1.223	.864	1.097	1.067	.292	8
9	.709	.668	.798	.860	.193	9
10	.430	.524	.649	.740	.067	10
11	.313	.349	.514	.575	.179	11
12	.245	.254	.269	.341	.153	12
13	.128	.128	.159	.161	.099	13
14	.159	.102	.164	.075	.118	14
15	.041	.050	.059	.017	.069	15
16	.075	.049	.117	.042	.042	16
17	.044	.067	.042	.108	.087	17
18	- .024	.034	.100	.034	.024	18
19	.033	.033	.131	.077	.041	19

c_n	0.705	0.717	0.757	0.751	0.636	c_n	0.775	0.796	0.864	0.710	0.669
c_m	.0116	.0147	.0118	.0011	.0073	c_m	-.0018	-.0151	-.0678	-.0654	-.0416
c_b	0.697	0.082	$x'_{op} = 23.8$	$y'_{op} = 42.9$		c_n'	0.743	$x'_{op} = 28.6$		$y'_{op} = 41.7$	
						c_m'	-.0266				
						c_b'	.310				

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TABLE XVII.- Continued.

$$[M \approx 0.80; \delta_f = 7^\circ \pm 1.5^\circ]$$

$$(q) M = 0.80 \quad c_{NA} = 0.74$$

$$\alpha = 13.0^\circ \quad \delta_{AL} = 0.2^\circ \text{ down}$$

$$\delta_f = 7.2^\circ$$

$$(r) M = 0.80 \quad c_{NA} = 0.74$$

$$\alpha = 15.0^\circ \quad \delta_{AL} = 0.8^\circ \text{ down}$$

$$\delta_f = 7.3^\circ$$

Orifice	Row				
	1	2	3	4	5
1	2.0423	1.0852	2.033	1.0430	1
2	2.0436	1.0814	1.0845	1.0312	2
3	1.0859	1.0658	1.0754	1.0360	3
4	1.0984	1.0727	1.0605	1.0140	4
5	1.0591	1.0471	1.0471	1.0283	5
6	1.0342	1.0471	1.0180	1.0123	6
7	1.0138	1.0159	1.0154	1.0023	7
8	1.1116	1.1112	1.087	1.033	8
9	0.983	0.957	0.962	0.653	9
10	0.779	0.829	0.951	0.817	10
11	0.659	0.689	0.610	0.712	11
12	0.561	0.523	0.519	0.605	12
13	0.350	0.353	0.450	0.420	13
14	0.330	0.258	0.355	0.362	14
15	0.234	0.296	0.316	0.306	15
16	0.253	0.282	0.346	0.324	16
17	0.194	0.313	0.280	0.312	17
18	0.115	0.223	0.286	0.276	18
19	0.033	0.025	0.123	0.208	19

Orifice	Row				
	1	2	3	4	5
1	2.0489	1.0578	1.0792	1.0372	1.0119
2	2.0442	1.0594	1.0441	1.0307	1.0112
3	1.0785	1.0471	1.0560	1.0214	0.992
4	1.0813	1.0505	1.0496	1.0249	0.820
5	1.0449	1.0383	1.0257	1.0145	0.697
6	1.0203	1.0324	1.0114	1.0065	0.653
7	1.0103	1.0124	1.0029	0.942	0.574
8	0.992	1.0064	0.975	0.985	0.476
9	0.902	0.922	0.901	0.766	0.427
10	0.769	0.845	0.700	0.721	0.267
11	0.691	0.705	0.792	0.701	0.427
12	0.624	0.595	0.618	0.576	0.400
13	0.407	0.382	0.557	0.433	0.370
14	0.367	0.381	0.462	0.450	0.379
15	0.287	0.341	0.457	0.327	0.299
16	0.340	0.385	0.511	0.361	
17	0.249	0.307	0.385	0.357	
18	0.165	0.277	0.424	0.305	
19	0.000	0.017	0.133	0.272	

$$c_n = 0.782 \quad c_m = -0.0515 \quad c_b = .323$$

$$x'_{ep} = 31.6 \quad y'_{ep} = 41.3$$

$$c_n = 0.756 \quad c_m = -.0681 \quad c_b = .310$$

$$x'_{ep} = 34.0 \quad y'_{ep} = 41.0$$

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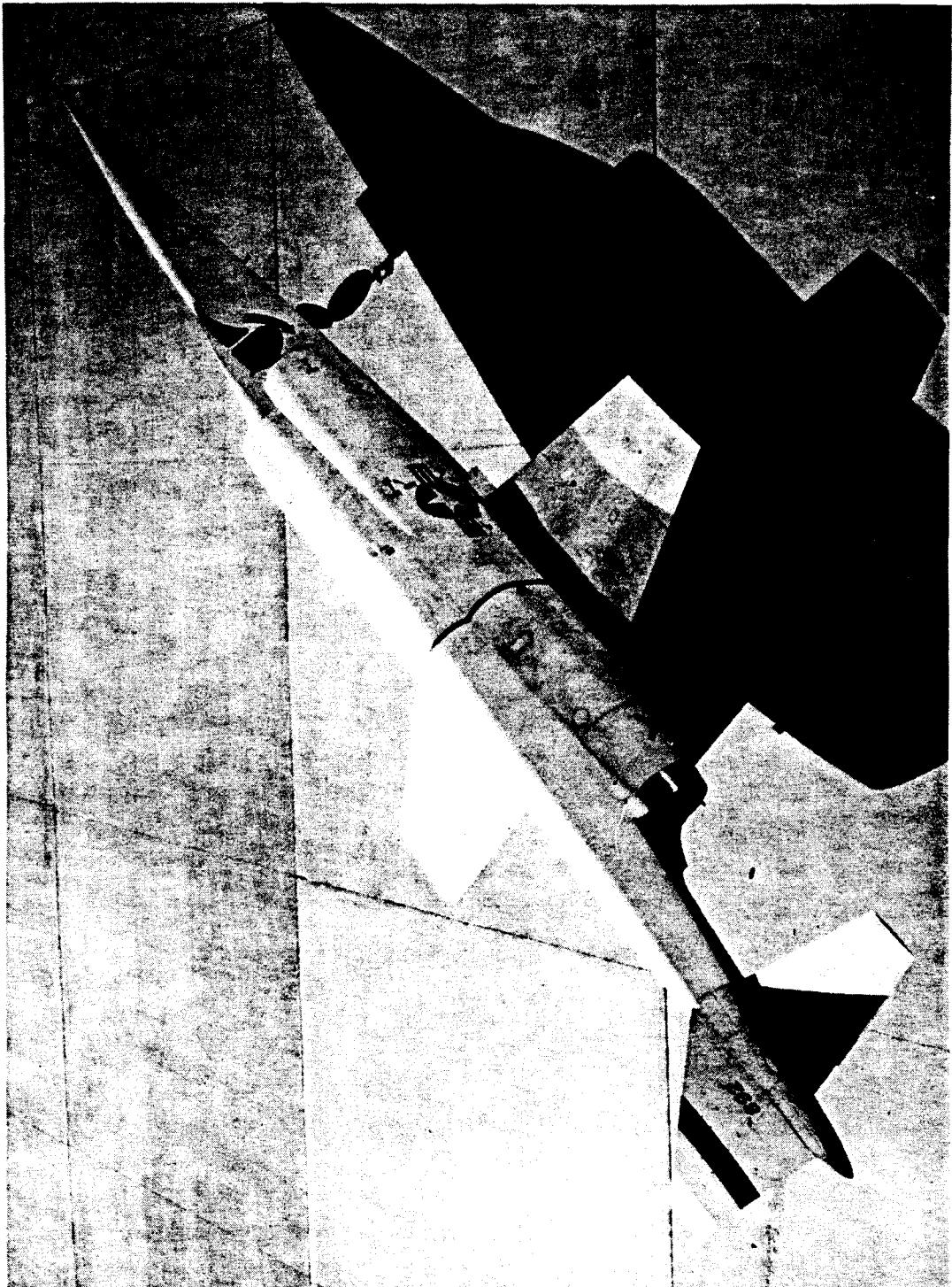
TABLE XVII.- Concluded.

$$\left[M \approx 0.80; \delta_f = 7^\circ \pm 1.5^\circ \right]$$

$$\begin{aligned}
 (s) \quad M &= 0.79 & \alpha &= 15.8^\circ \\
 C_{M_A} &= 0.72 & \delta_{AL} &= 0.9^\circ \text{ down} \\
 C_T &= 7.1^\circ
 \end{aligned}$$

Orifice	Row				
	1	2	3	4	5
1	2.0494	1.0448	1.0622	1.0313	1.0115
2	1.0707	1.0424	1.0392	1.0247	1.0075
3	1.0639	1.0390	1.0411	1.0200	0.942
4	1.0671	1.0321	1.0336	1.0211	0.834
5	1.0402	1.0245	1.0254	1.0119	0.684
6	1.0036	1.0184	1.0165	1.0027	0.640
7	1.0054	0.973	1.0001	0.903	0.551
8	0.920	0.979	1.0026	0.946	0.436
9	0.872	0.850	0.864	0.745	0.387
10	0.766	0.842	0.638	0.683	0.295
11	0.714	0.692	0.736	0.626	0.403
12	0.611	0.626	0.536	0.546	0.394
13	0.456	0.455	0.491	0.427	0.364
14	0.430	0.410	0.433	0.402	0.399
15	0.348	0.404	0.443	0.329	0.301
16	0.333	0.429	0.429	0.364	
17	0.277	0.344	0.379	0.376	
18	0.200	0.331	0.358	0.307	
19	0.025	0.034	0.107	0.300	
c_A	0.810	0.781	0.791	0.704	0.612
c_m	-0.0615	-0.0866	-0.0932	-0.0795	-0.0787
C_N^1	0.723			$x'_{cp} = 35.0$	
C_m^1	-0.0726			$y'_{cp} = 41.1$	
C_D^1	.297				

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Figure 1.- Photograph of the Douglas X-3 research airplane.

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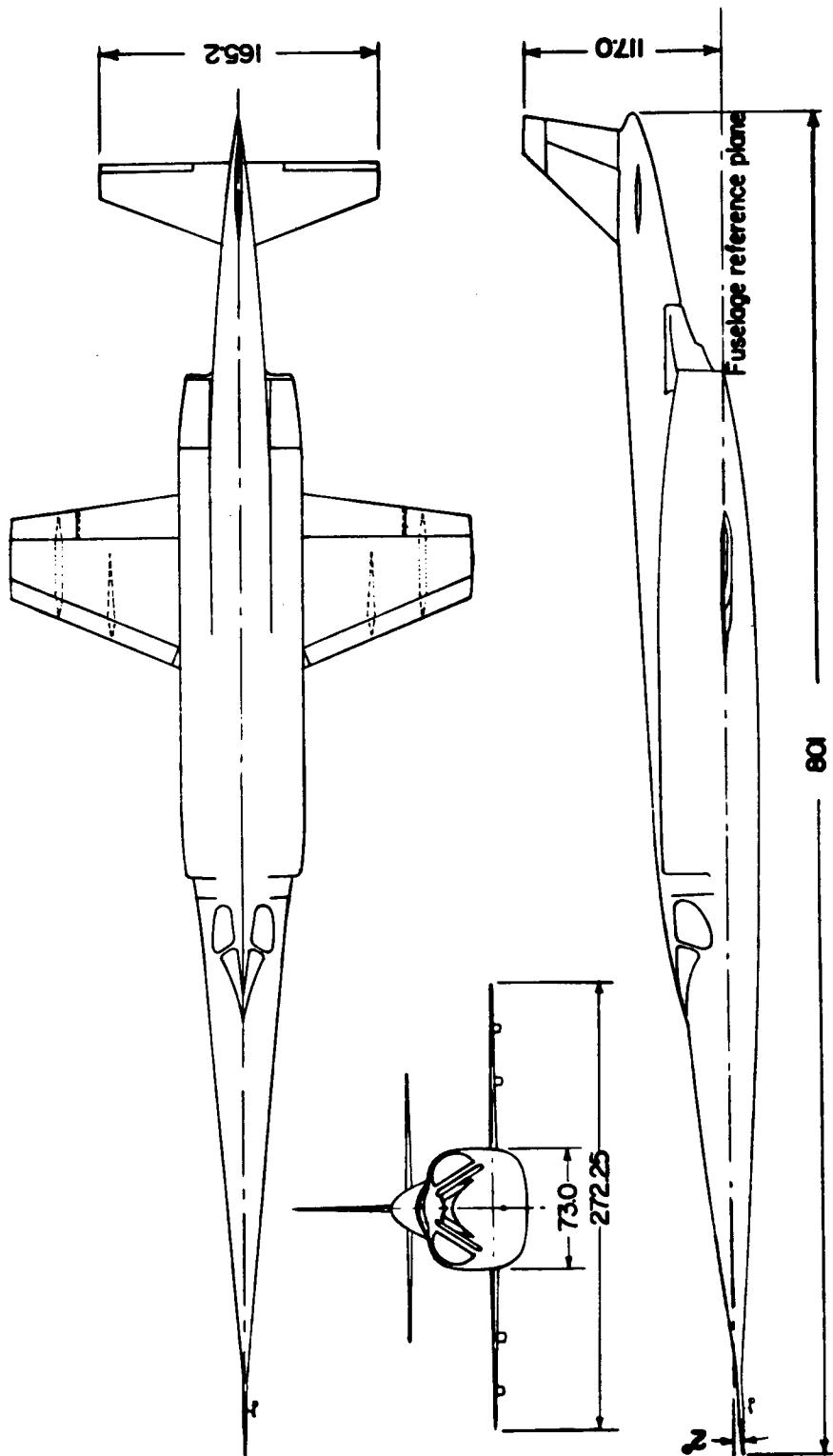
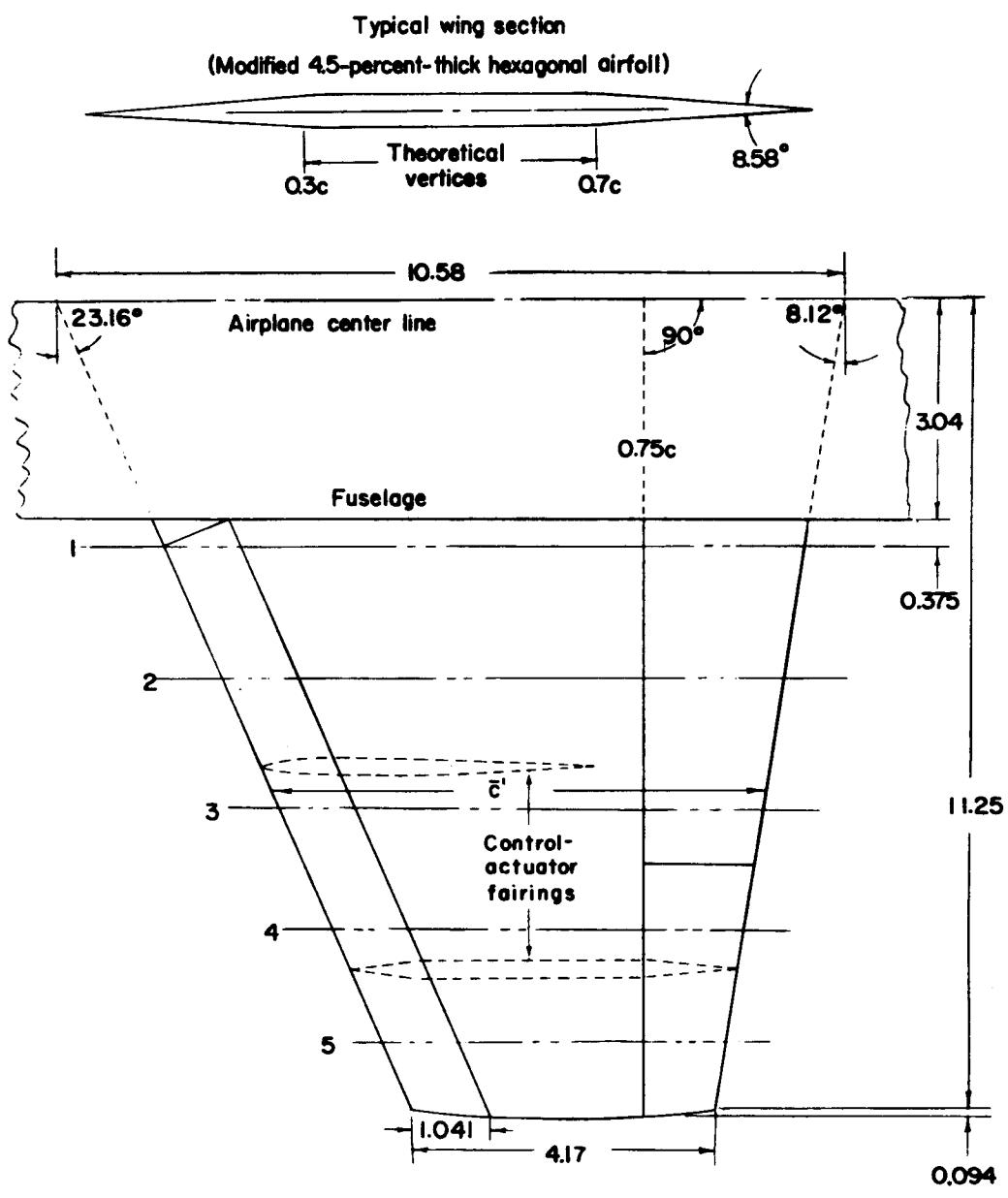


Figure 2.- Three-view drawing of the X-3 airplane. All dimensions are in inches.

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Orifice row	1	2	3	4	5
Chord length, ft	8.63	7.59	6.54	5.59	4.69
Spanwise location, percent $b'/2$	0	0.251	0.462	0.673	0.872

Figure 3.- Drawing of the left wing of the Douglas X-3 airplane showing the spanwise location of the orifice rows. All dimensions are in feet unless otherwise stated.

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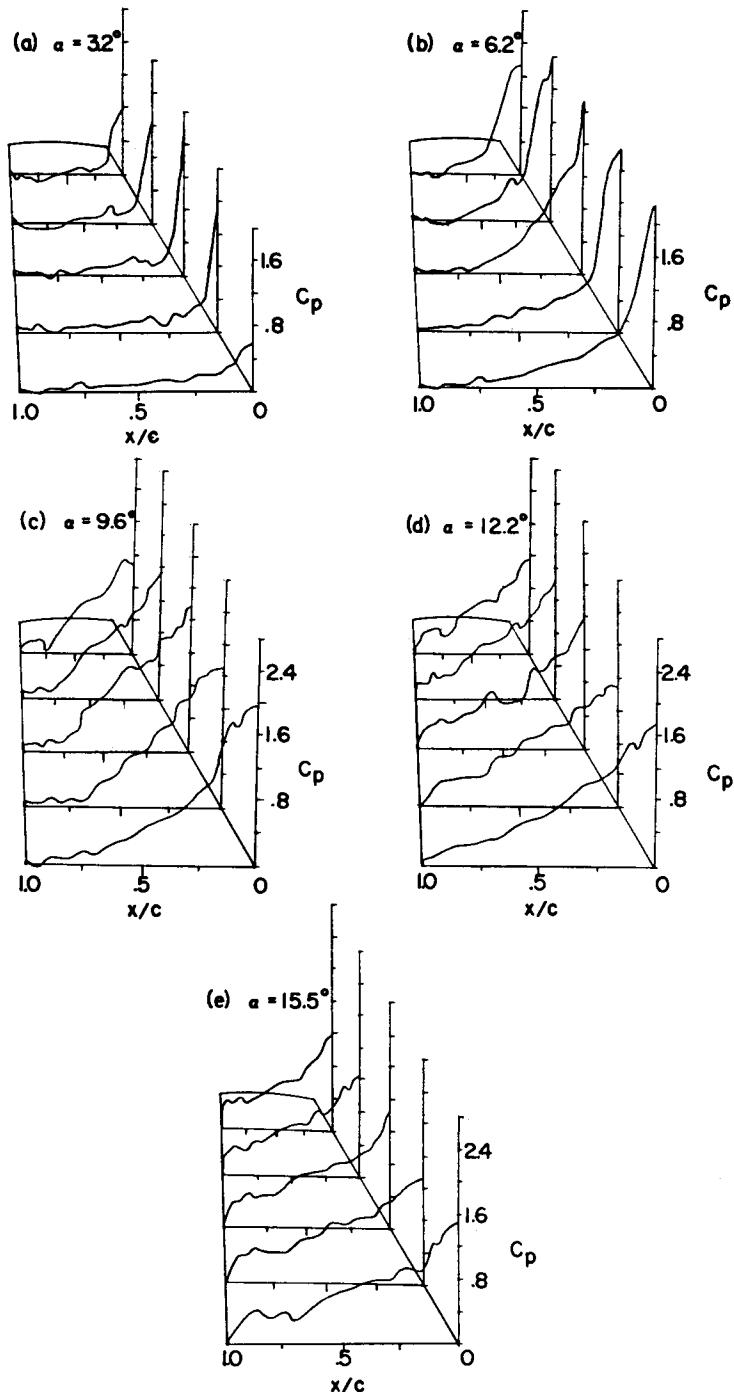


Figure 4.- Chordwise load distributions over the left wing of the X-3 airplane at five orifice stations for several values of angle of attack.
 $M \approx 0.71$.

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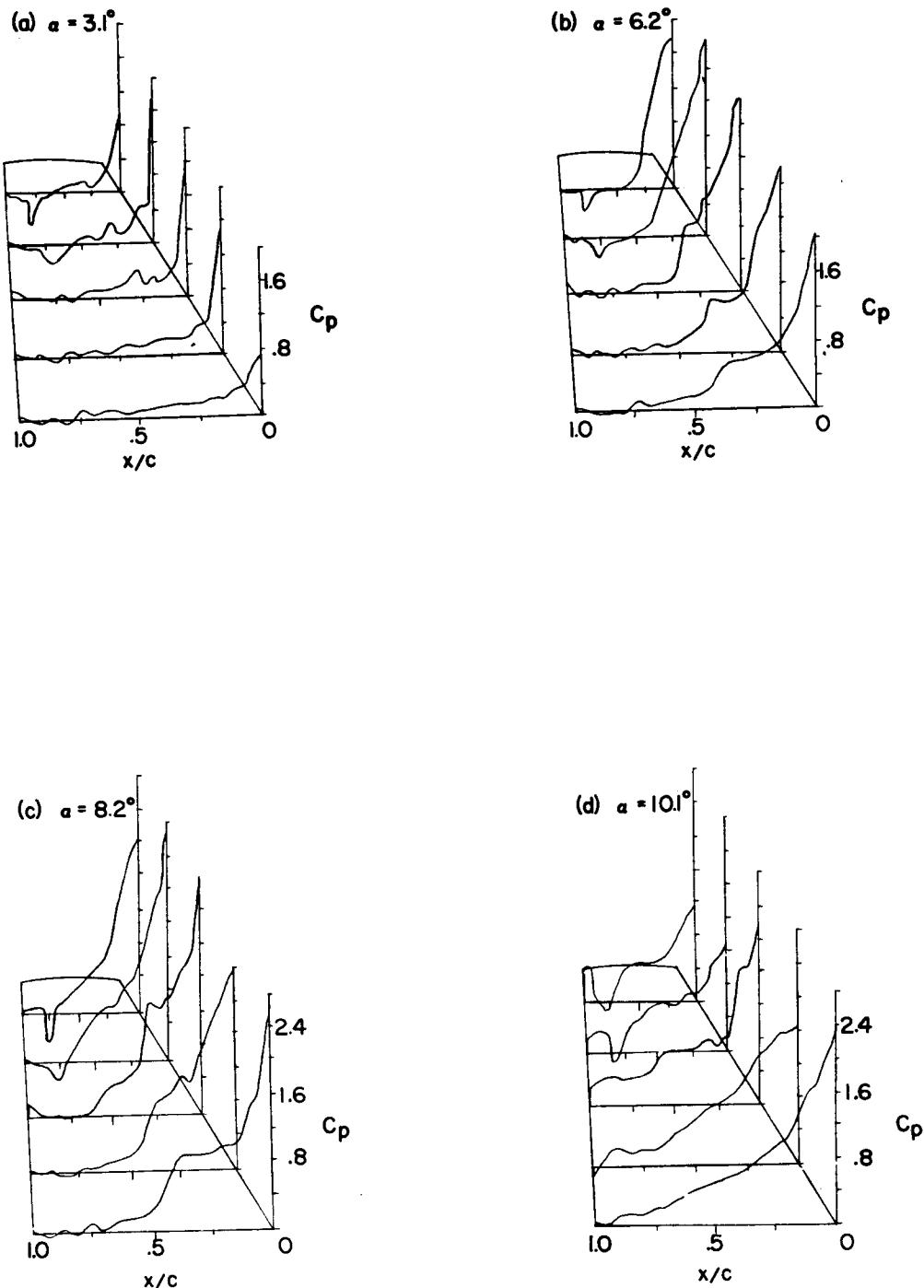


Figure 5.- Chordwise load distributions over the left wing of the X-3 airplane at five orifice stations for several values of angle of attack.
 $M \approx 0.83$.

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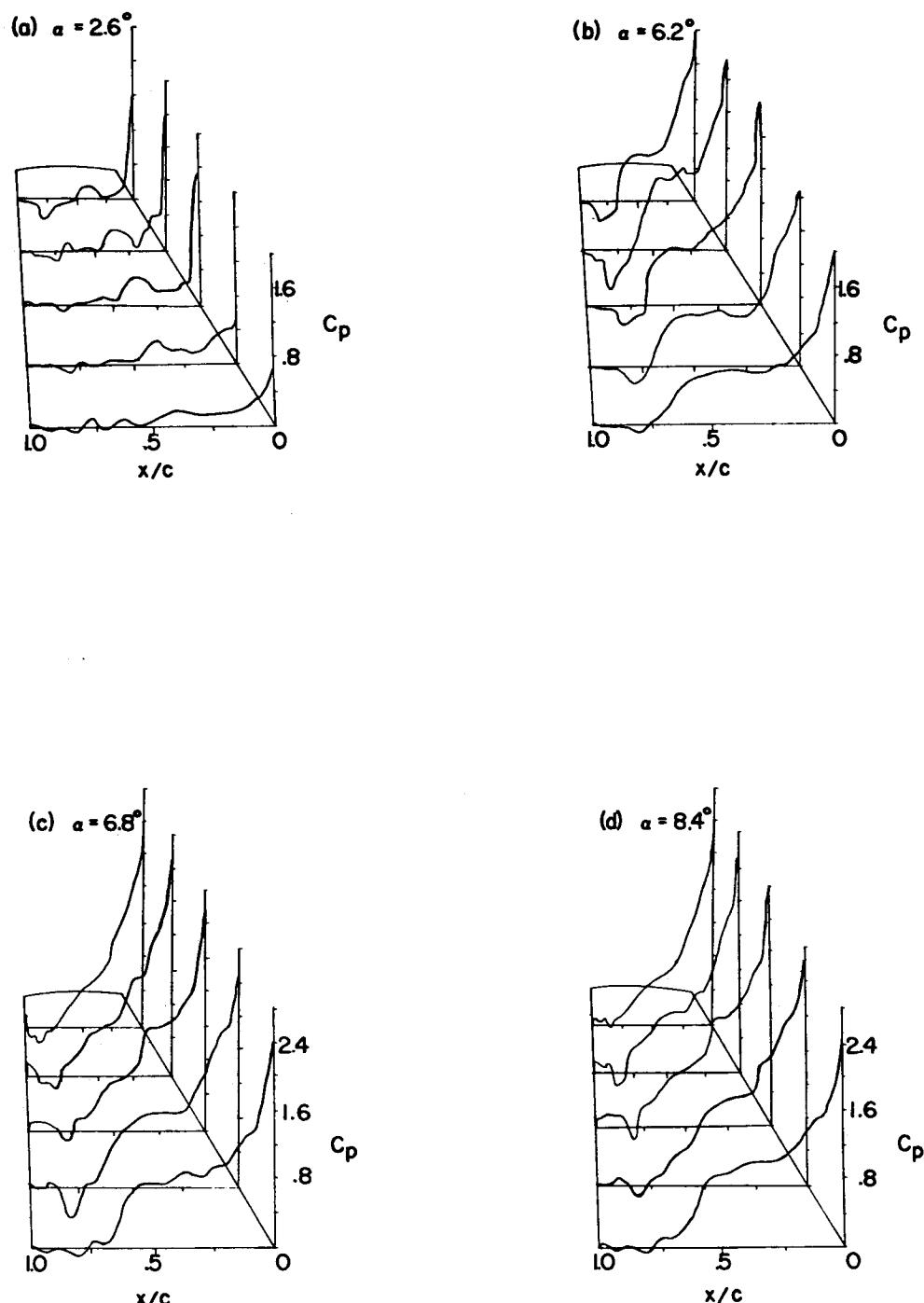


Figure 6.- Chordwise load distributions over the left wing of the X-3 airplane at five orifice stations for several values of angle of attack.
 $M \approx 0.88$.

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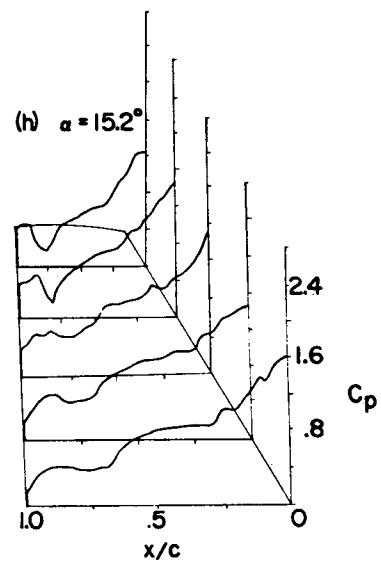
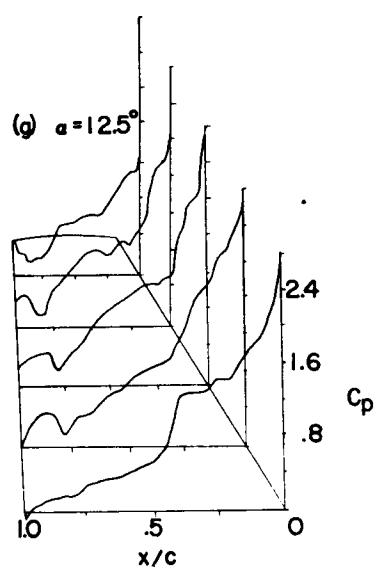
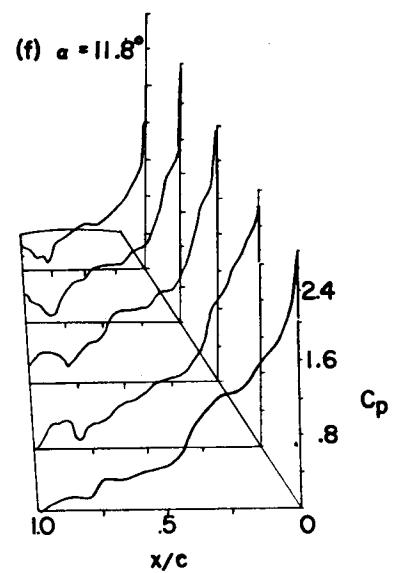
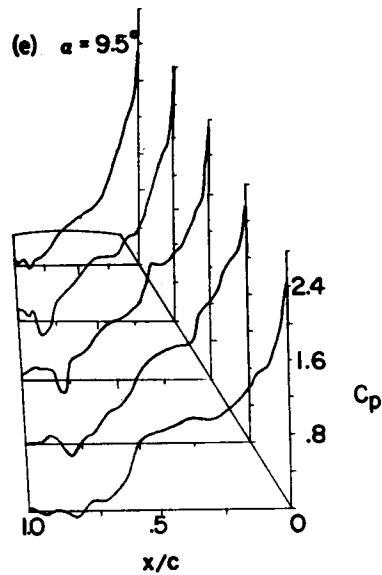


Figure 6.- Concluded.

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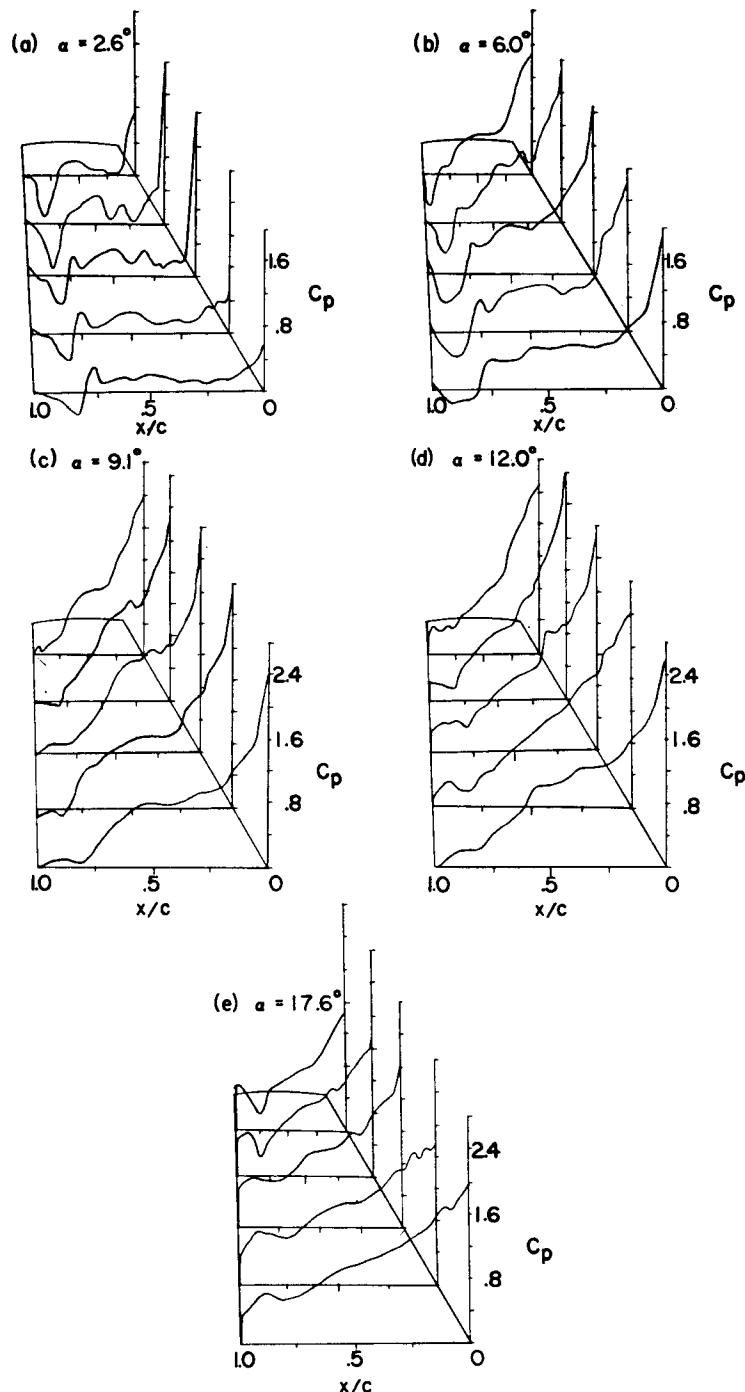


Figure 7.- Chordwise load distributions over the left wing of the X-3 airplane at five orifice stations for several values of angle of attack.
 $M \approx 0.92$.

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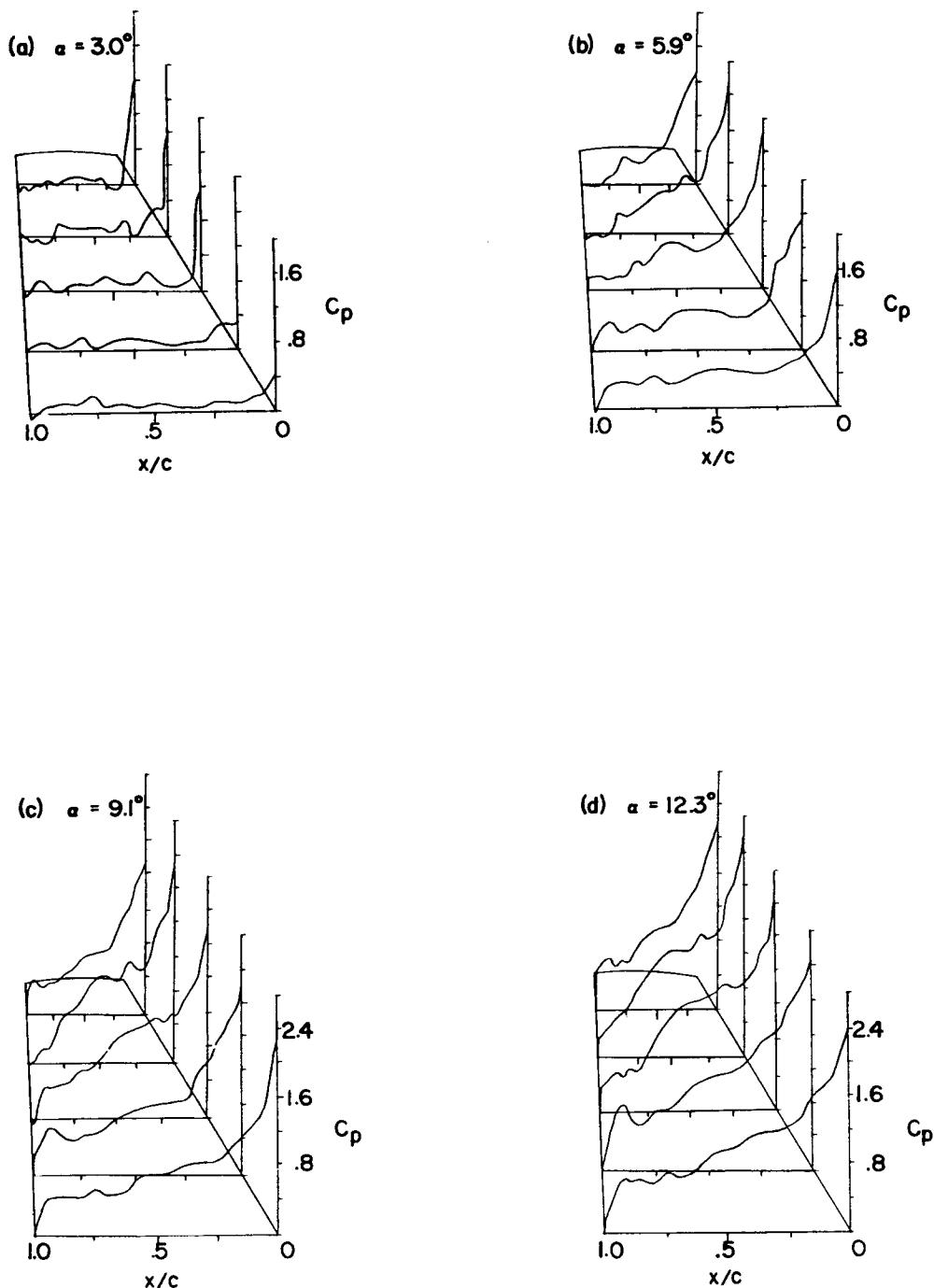


Figure 8.- Chordwise load distributions over the left wing of the X-3 airplane at five orifice stations for several values of angle of attack.
 $M \approx 0.99$.

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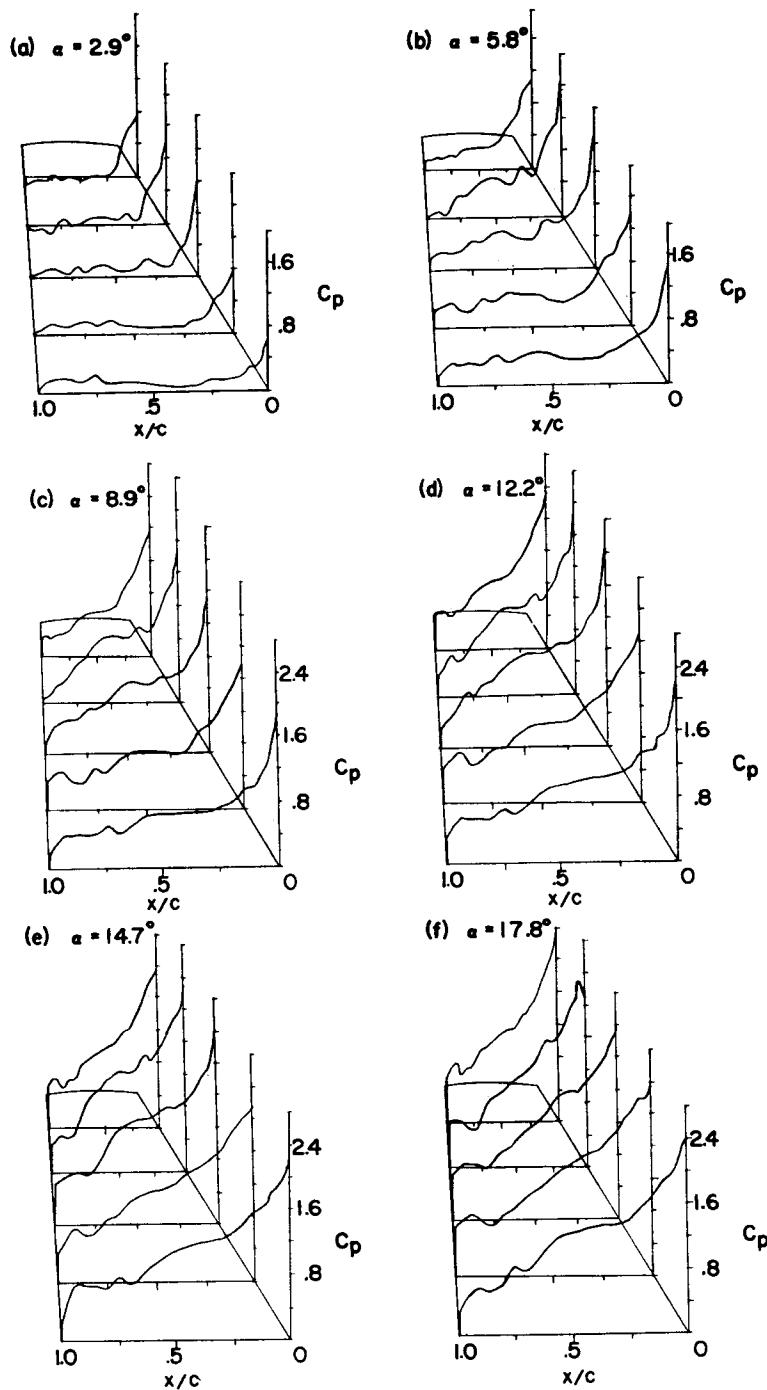


Figure 9.-- Chordwise load distributions over the left wing of the X-3 airplane at five orifice stations for several values of angle of attack.
 $M \approx 1.15$.

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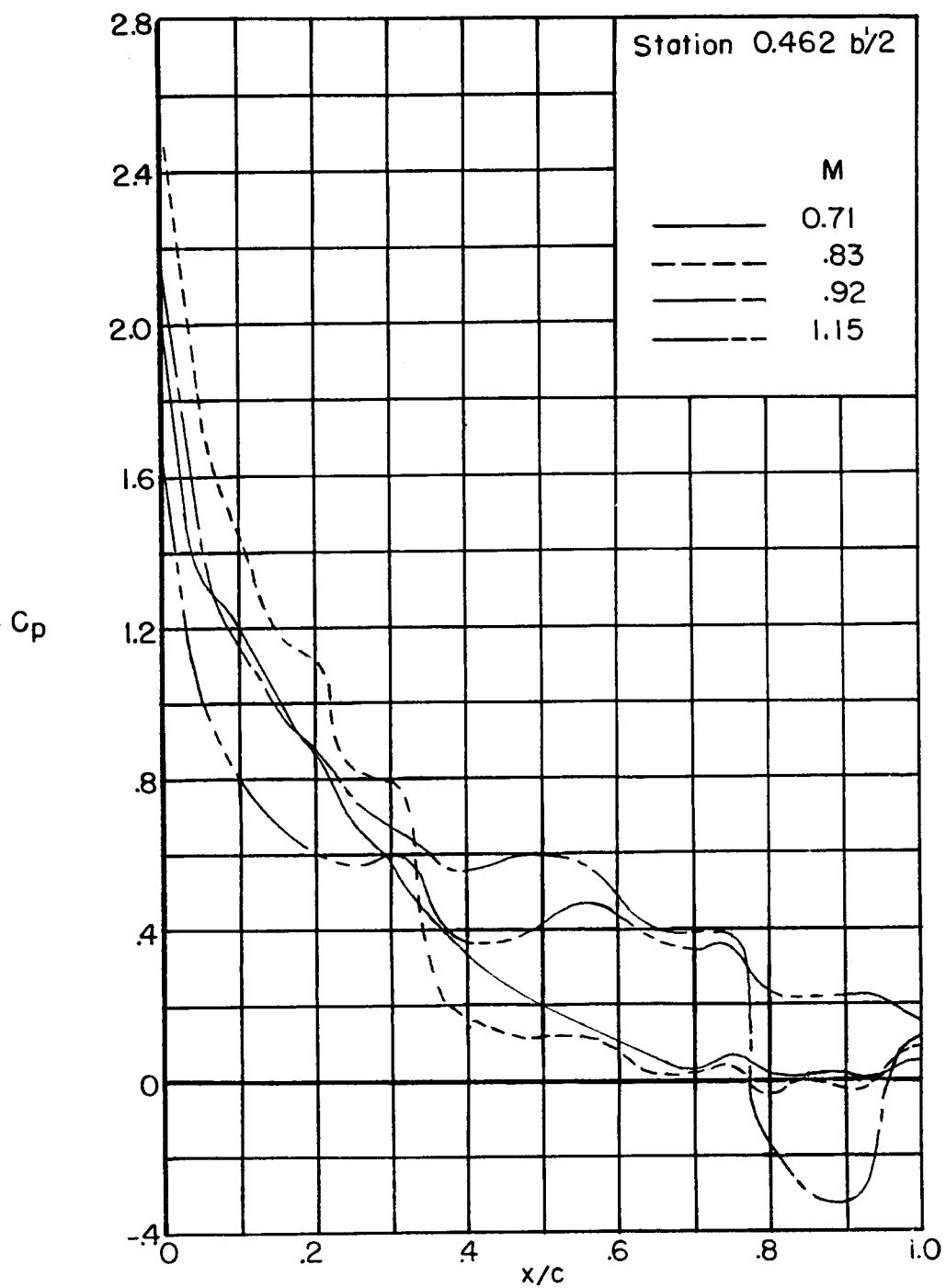


Figure 10.- Effect of Mach number on the load distribution over the midsemispan orifice station of the left wing of the X-3 airplane.
 $\alpha \approx 6^\circ$.

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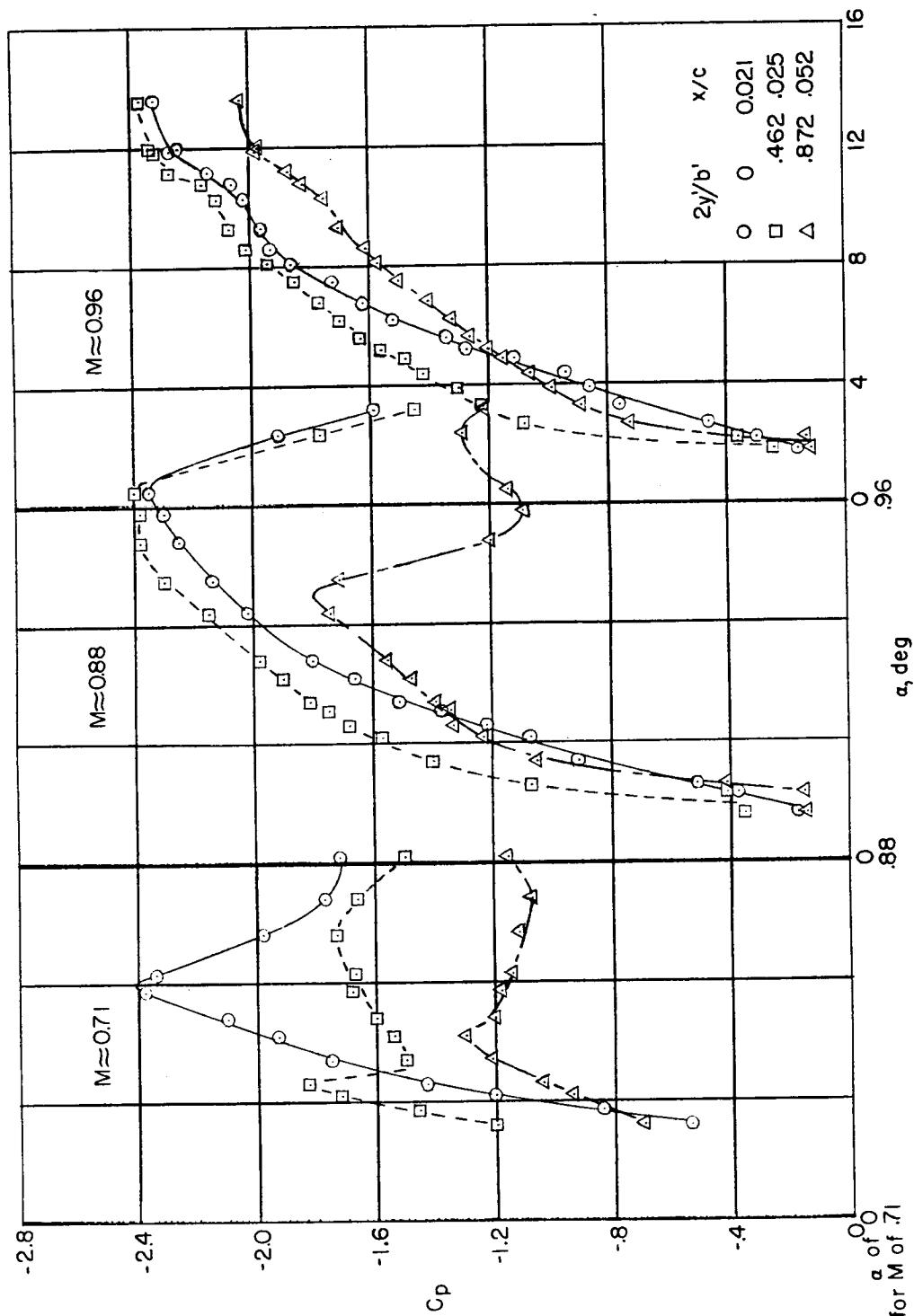


Figure 11.- Variation with angle of attack of the resultant-pressure coefficient at the leading edge of the wing of the X-3 airplane for the root, midsemispan, and tip orifice stations.

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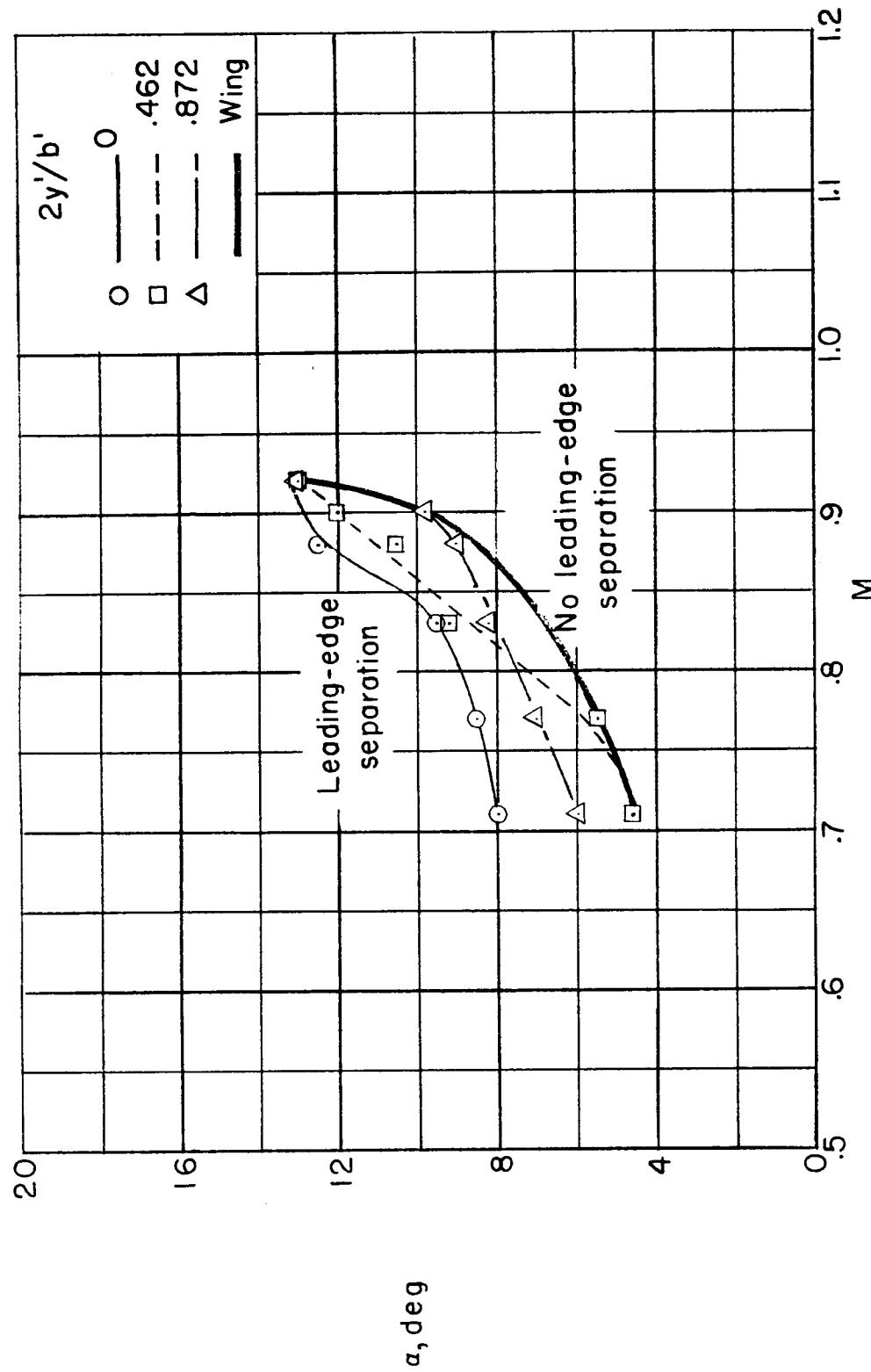


Figure 12.- Approximate boundary for leading-edge flow separation for the root, midsemispan, and tip orifice stations of the wing of the X-3 airplane.

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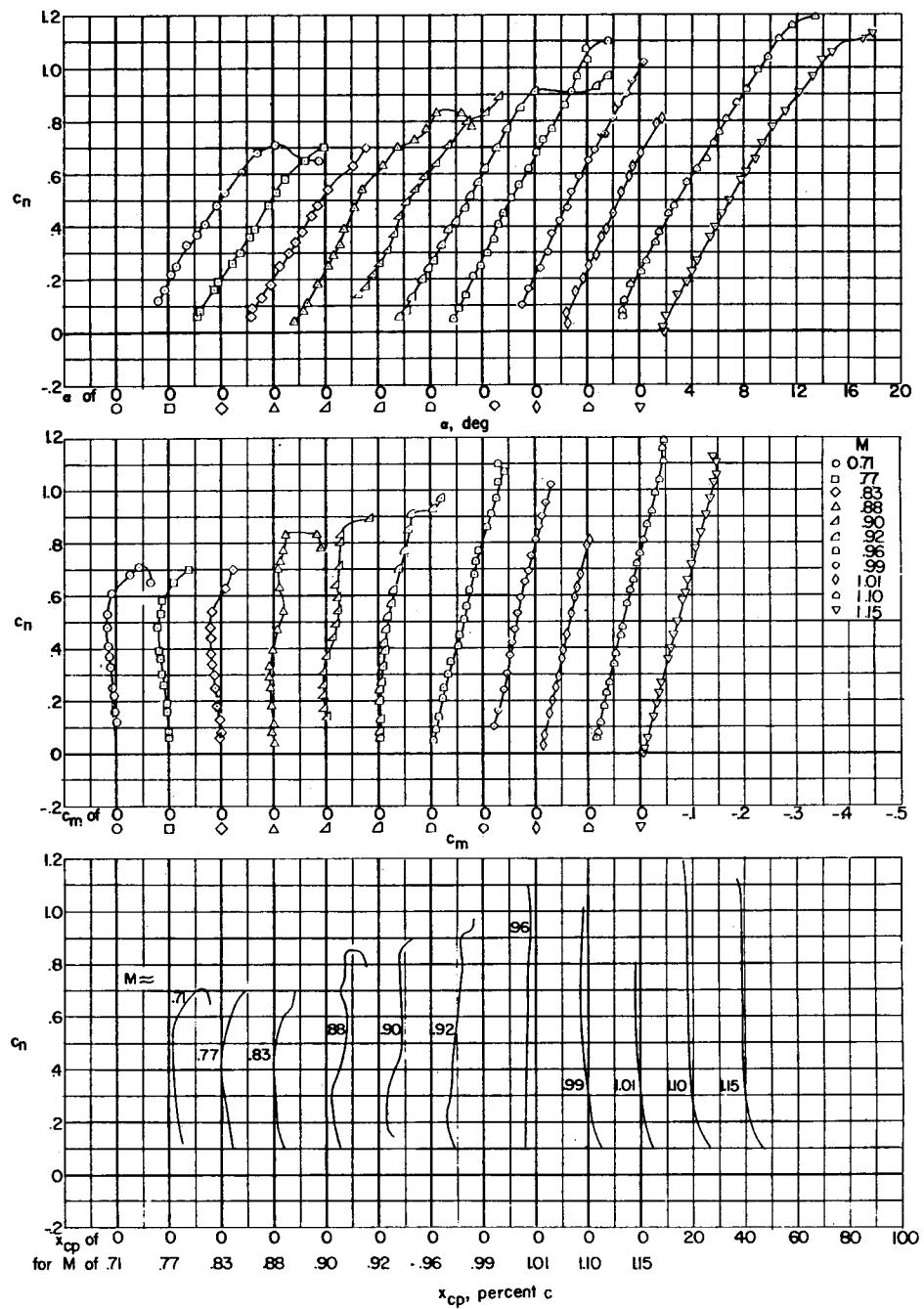
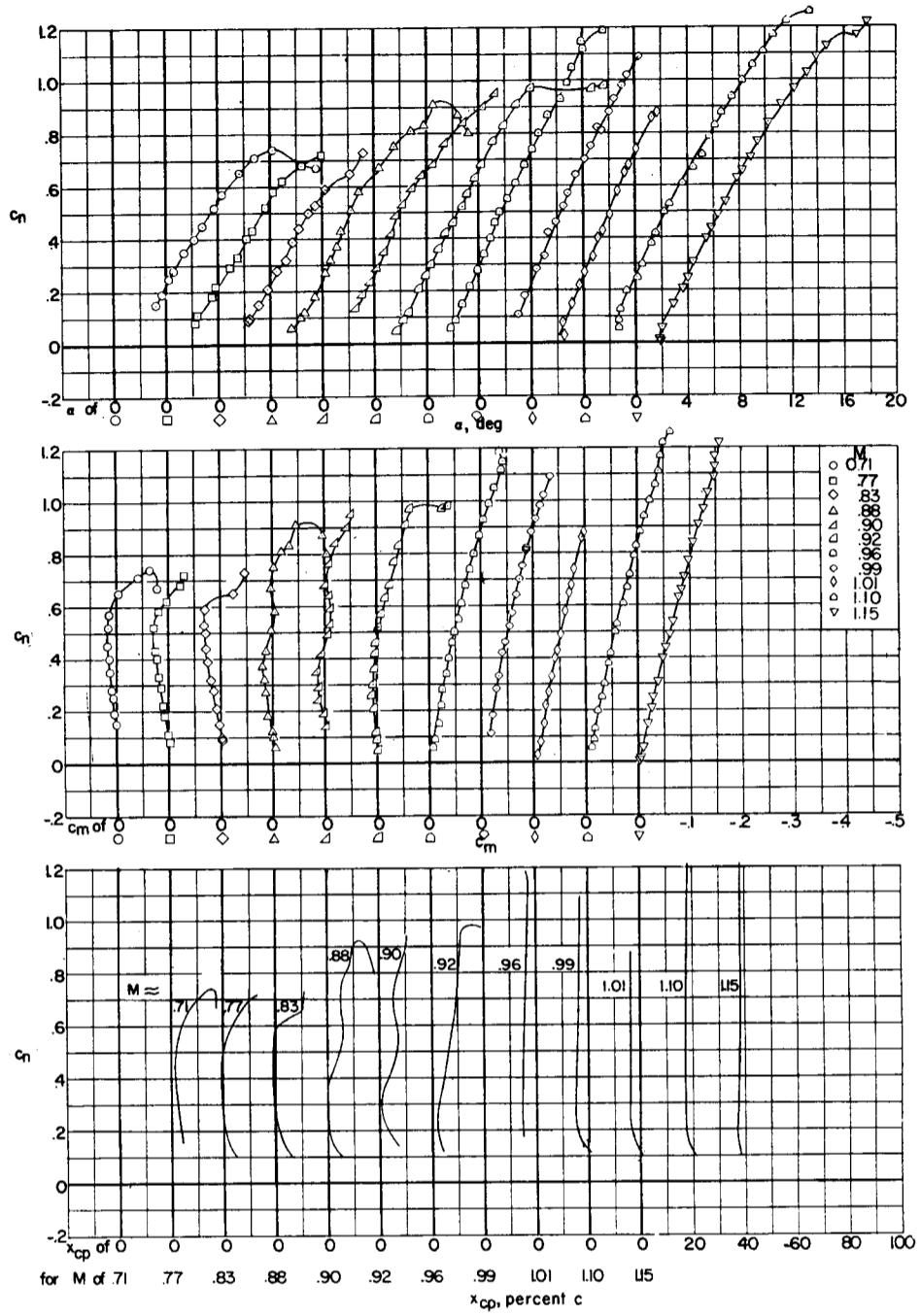
(a) Station Ob¹/2.

Figure 13.- Wing-section aerodynamic characteristics for the five orifice stations of the wing of the X-3 airplane.

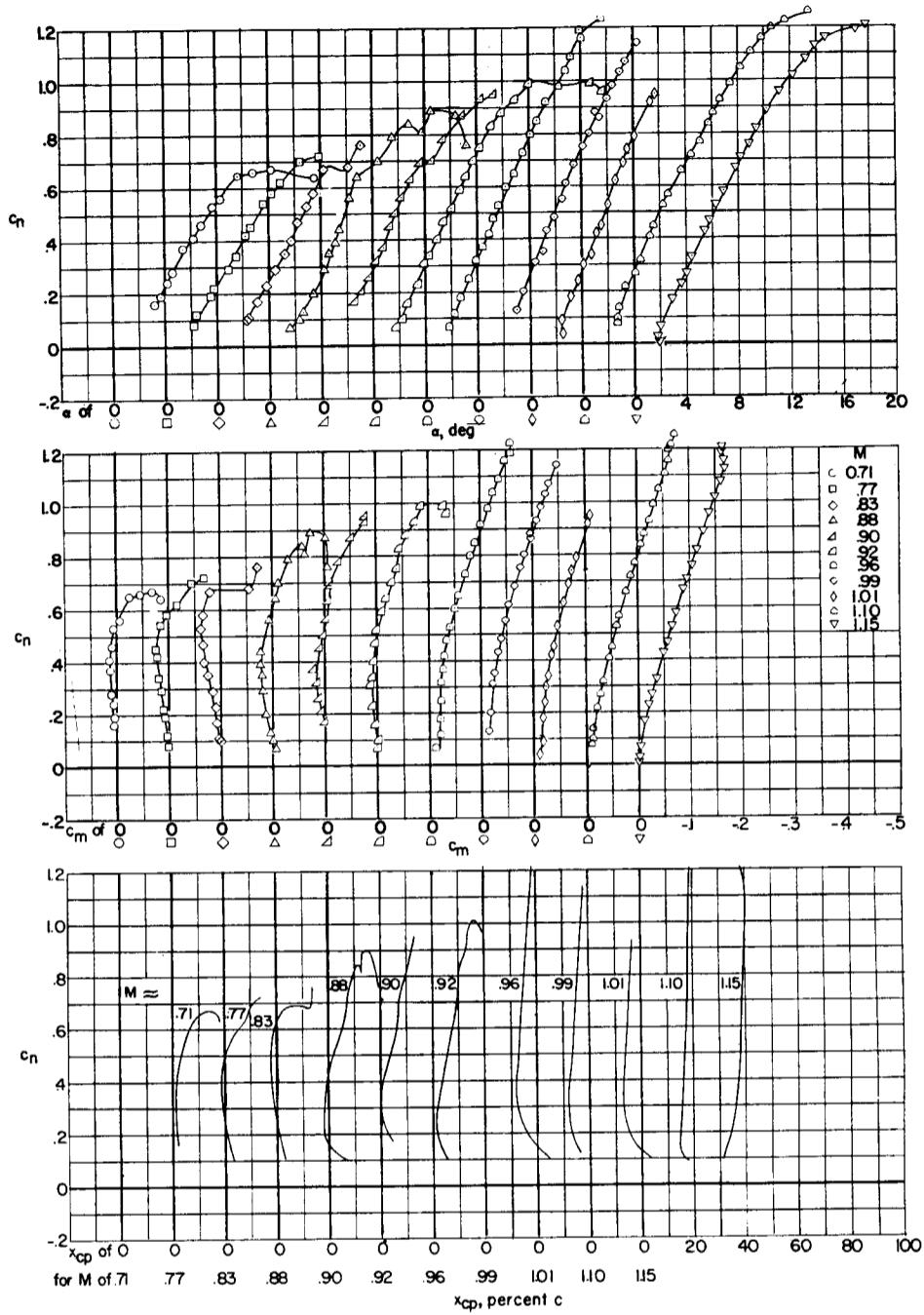
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(b) Station 0.23lb'/2.

Figure 13.- Continued.

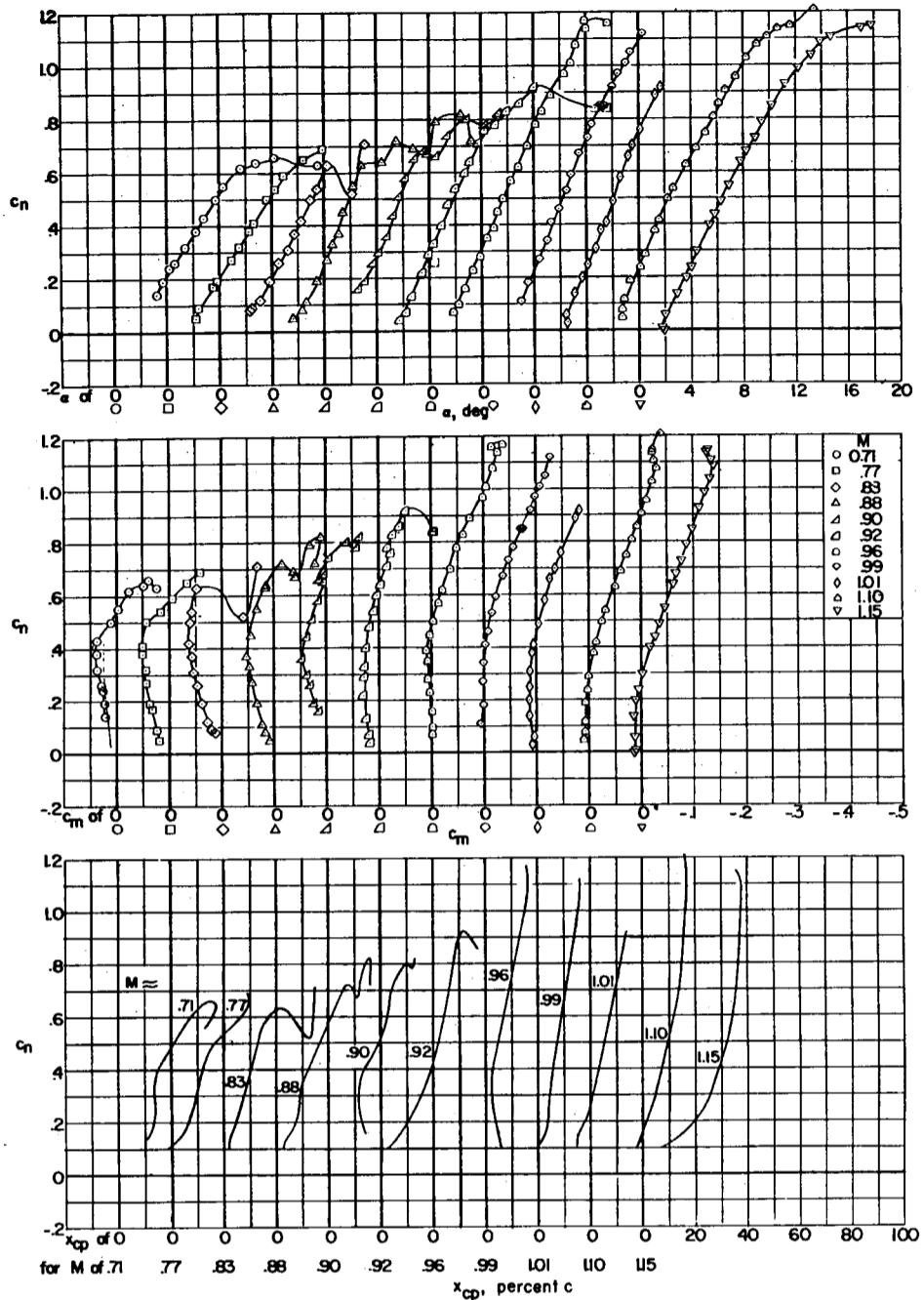
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(c) Station 0.462b'/2.

Figure 13.- Continued.

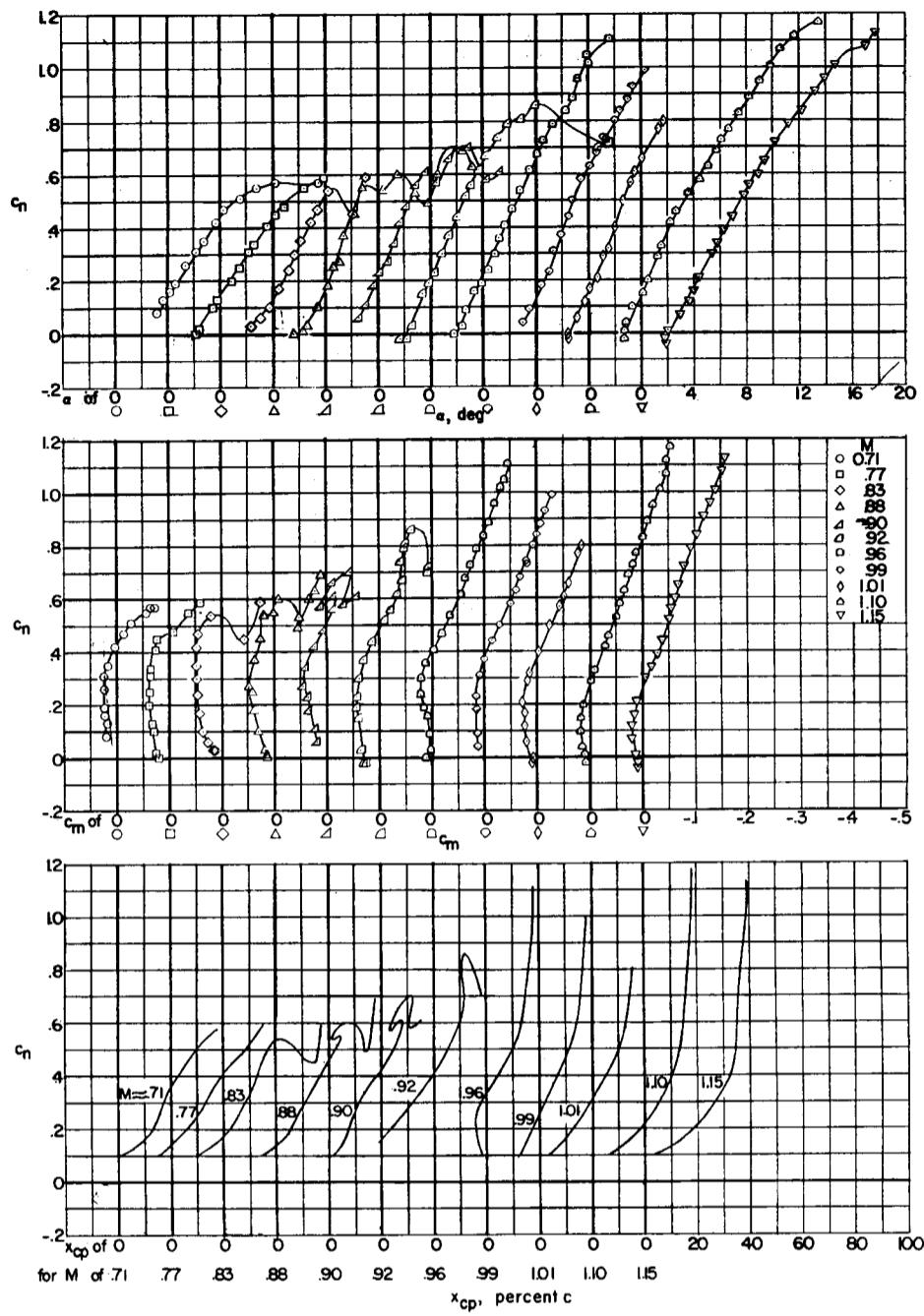
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(d) Station 0.673b' /2.

Figure 13.- Continued.

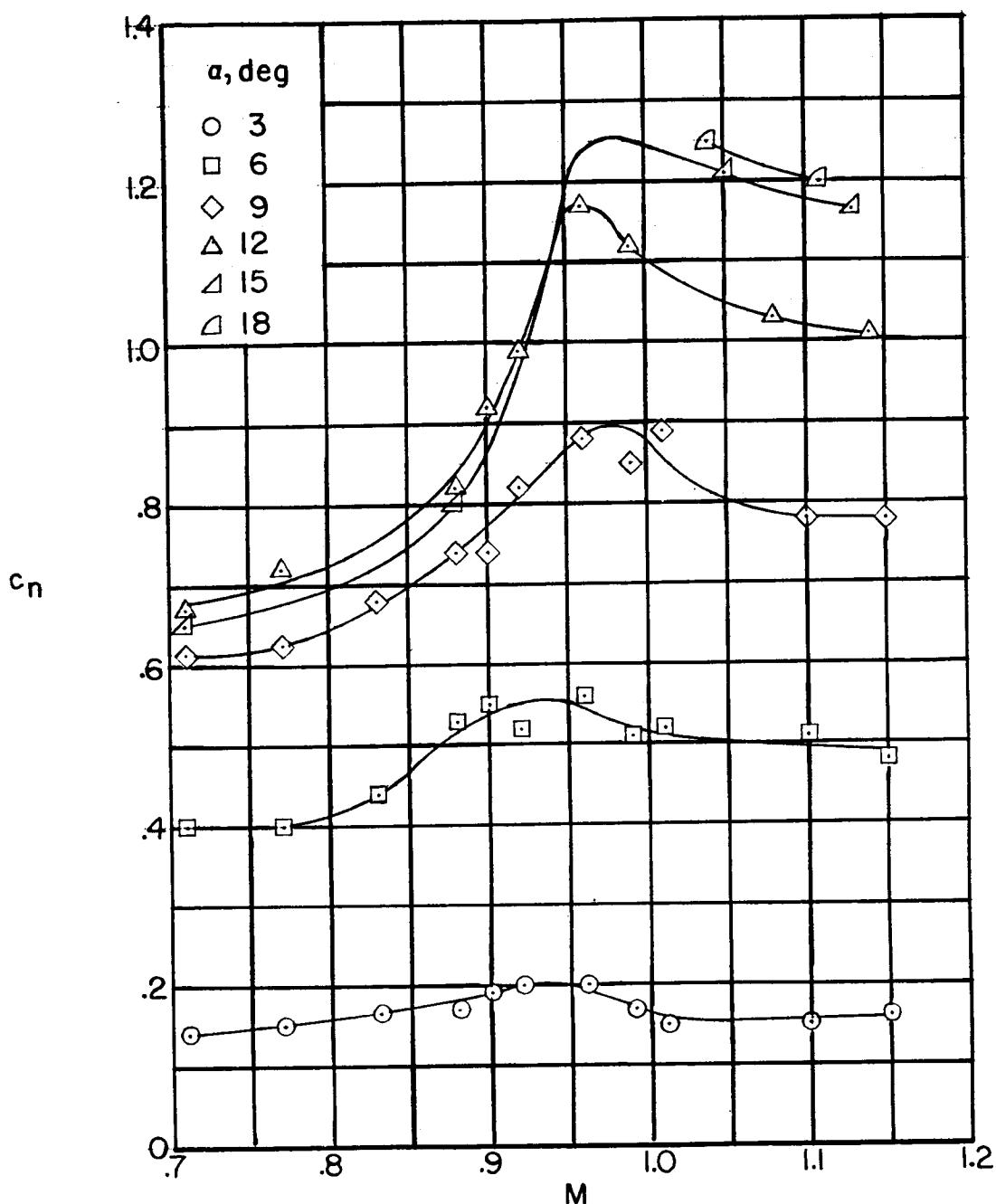
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(e) Station 0.872b' /2.

Figure 13.- Concluded.

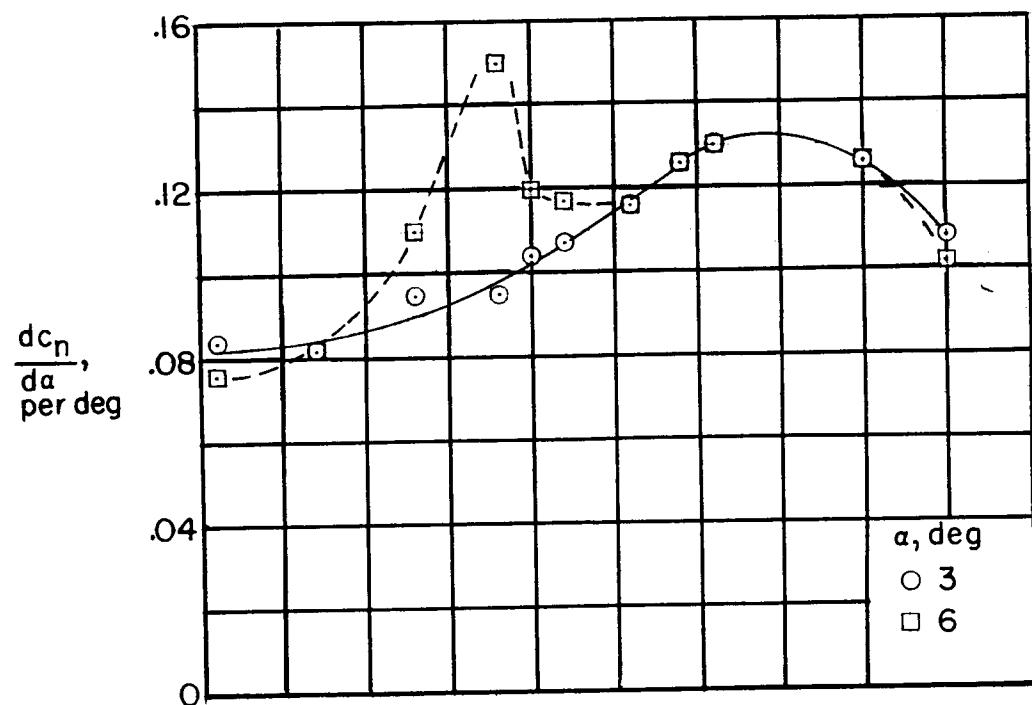
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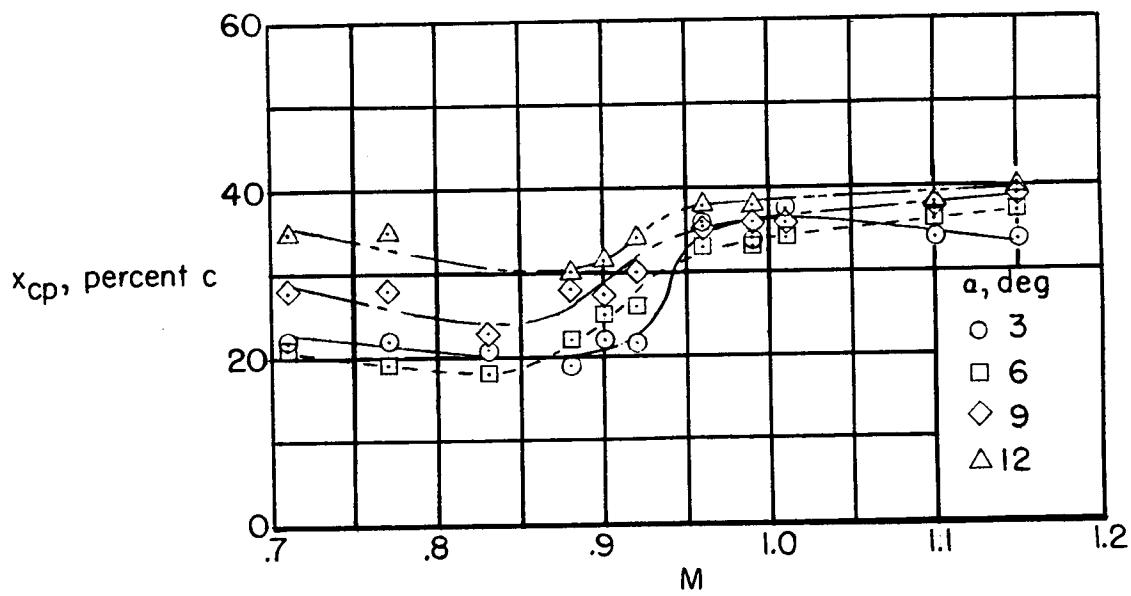
(a) Normal-force coefficient.

Figure 14.- Variation with Mach number of the aerodynamic characteristics of the midsemispan orifice station ($0.462b'/2$) of the wing of the X-3 airplane at several angles of attack.

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(b) Normal-force-curve slope.



(c) Center of pressure.

Figure 14.- Concluded.

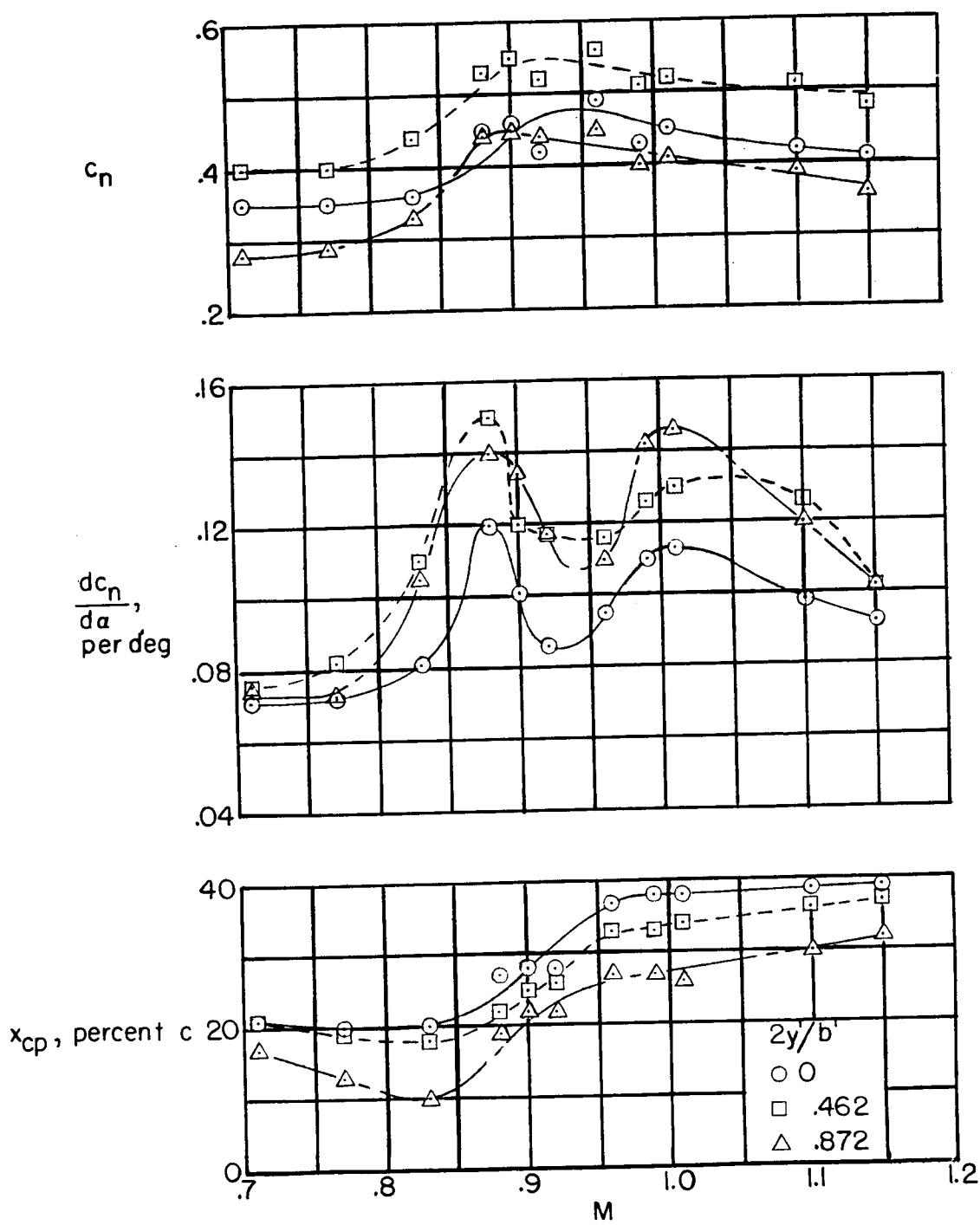


Figure 15.- Variation with Mach number of the aerodynamic characteristics of the root, midsemispan, and tip orifice stations of the wing of the X-3 airplane. $\alpha \approx 6^\circ$.

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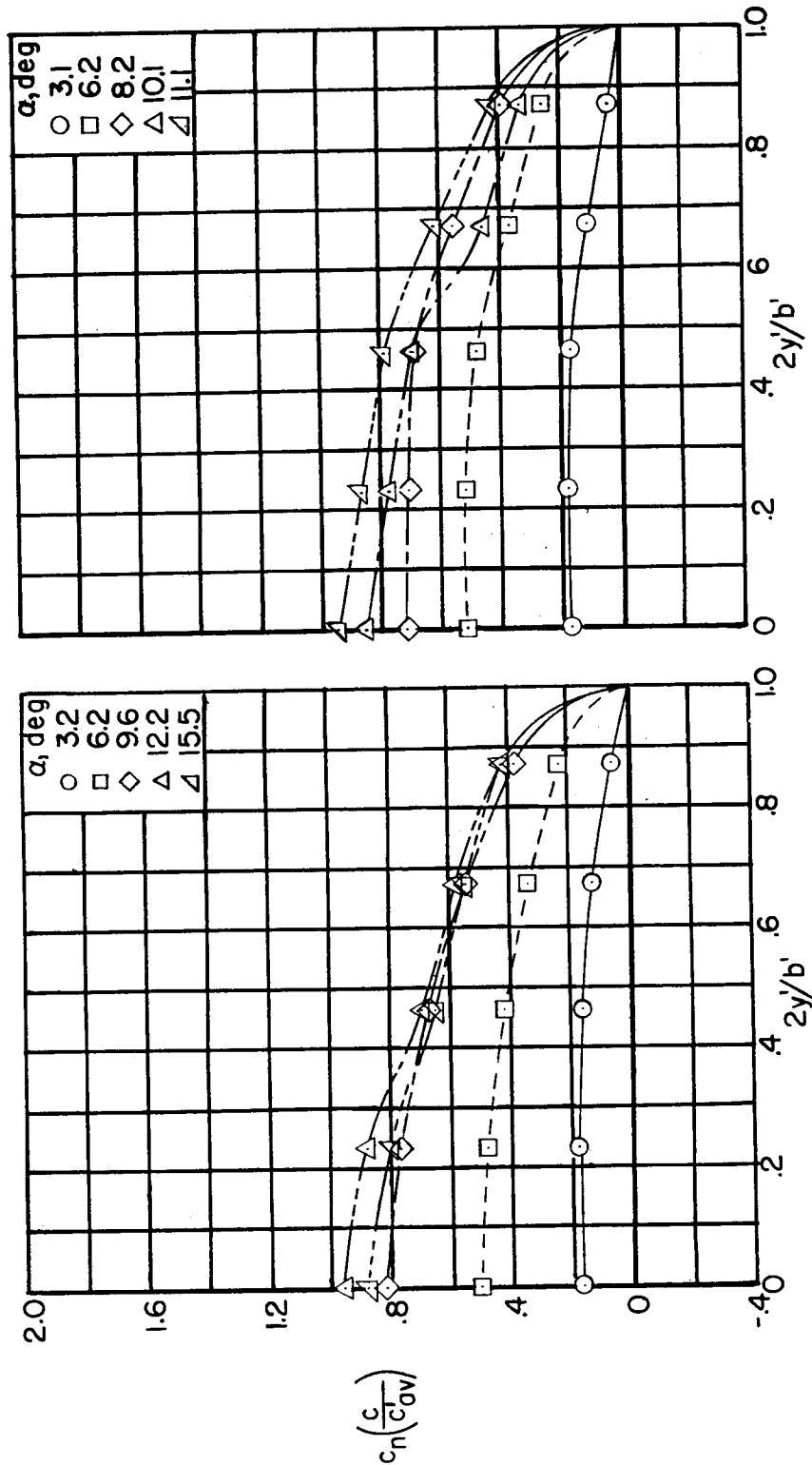


Figure 16.- Spanwise load distributions over the wing of the X-3 airplane at representative Mach numbers and angles of attack.

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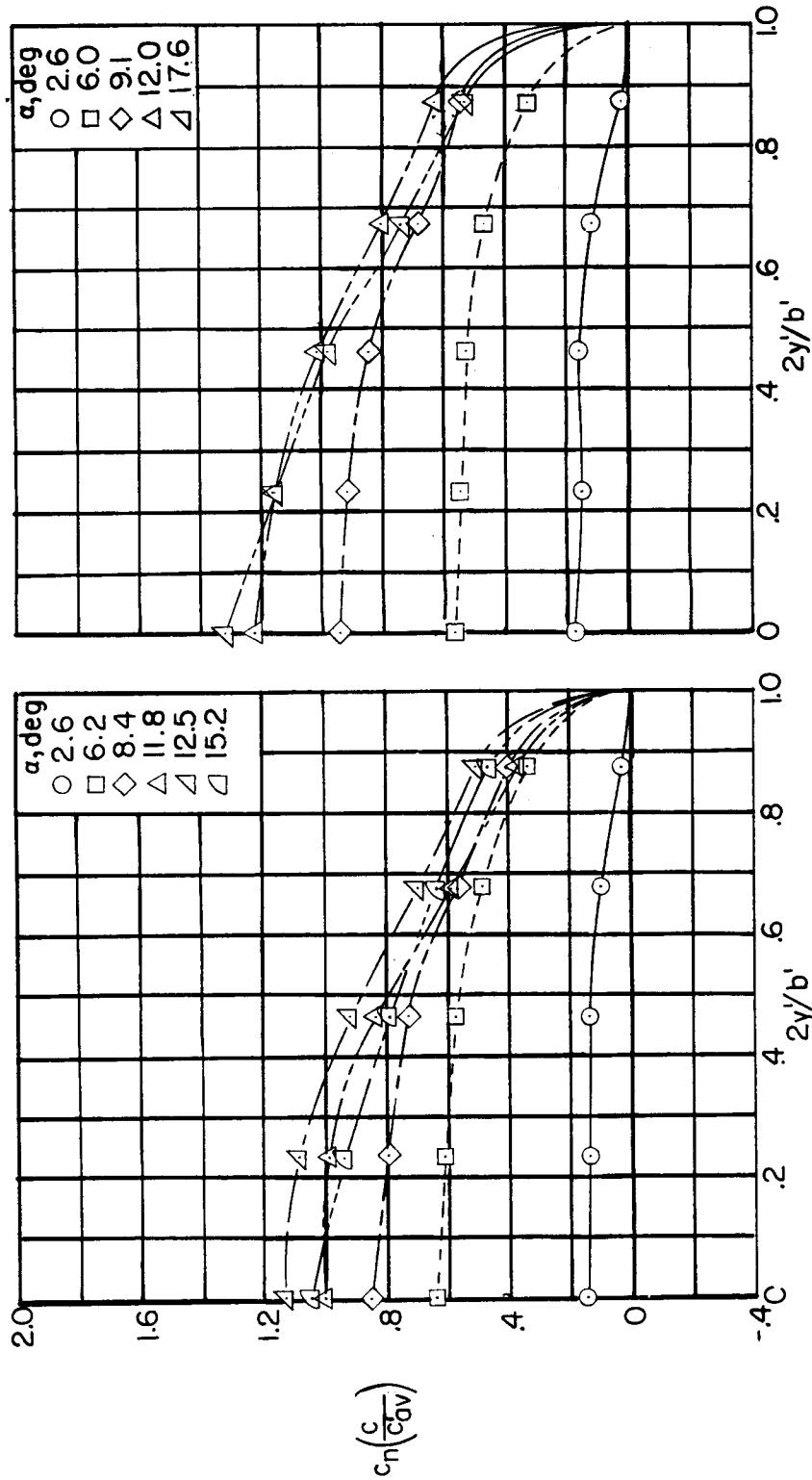


Figure 16.- Continued.

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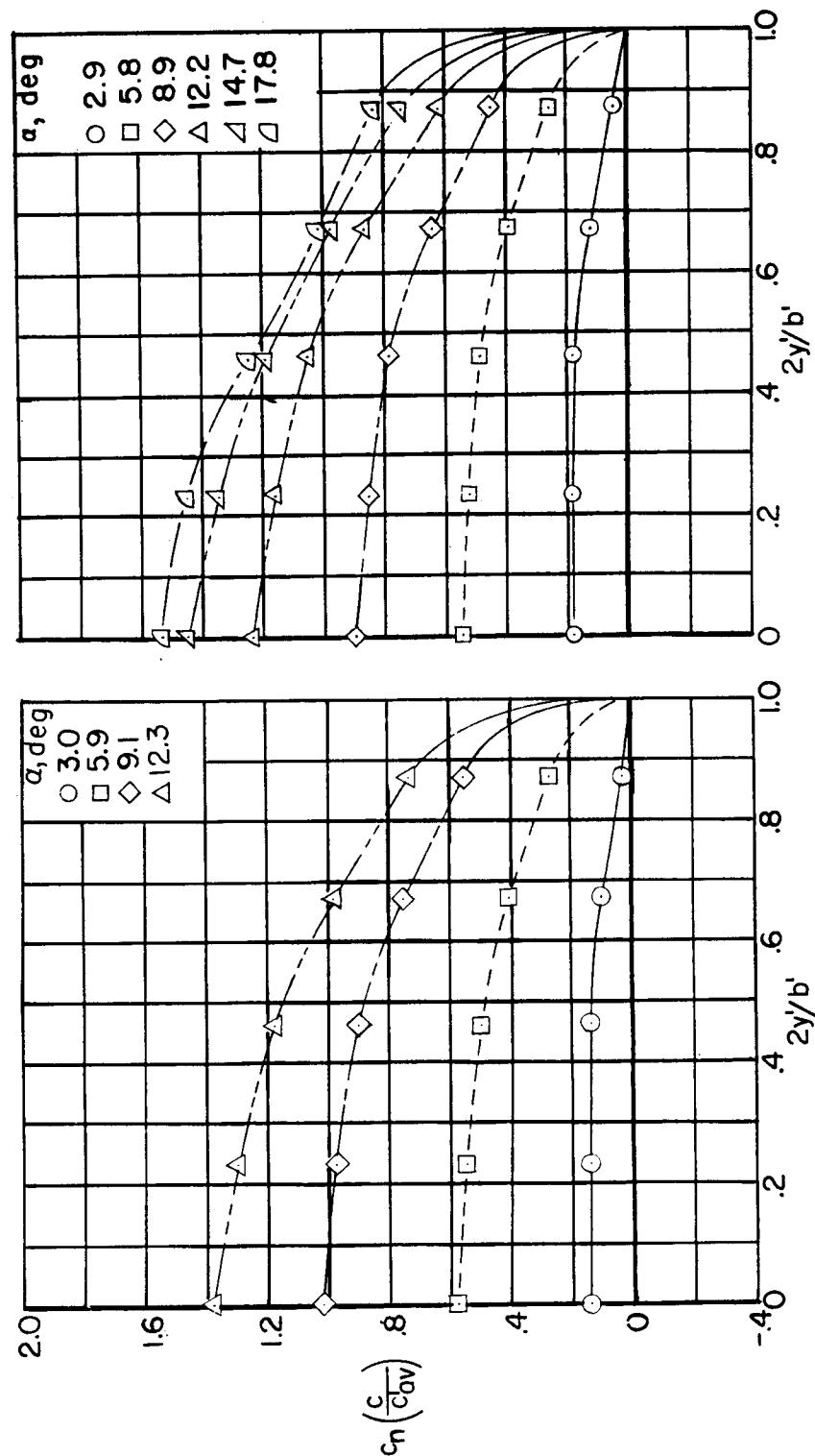


Figure 16.- Concluded.

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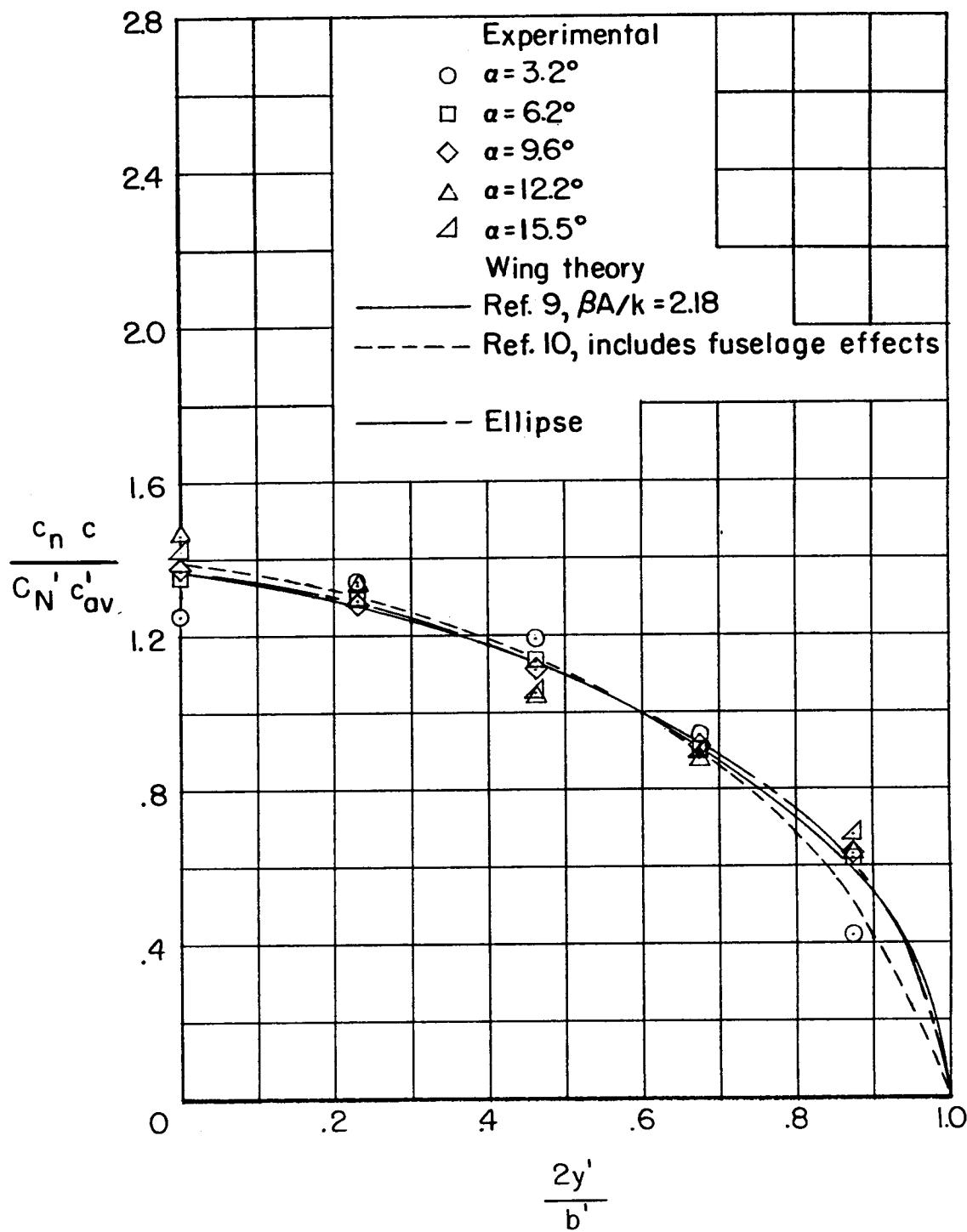


Figure 17-- Comparison of spanwise load distributions over the wing of the X-3 airplane with theory. $M \approx 0.71$.

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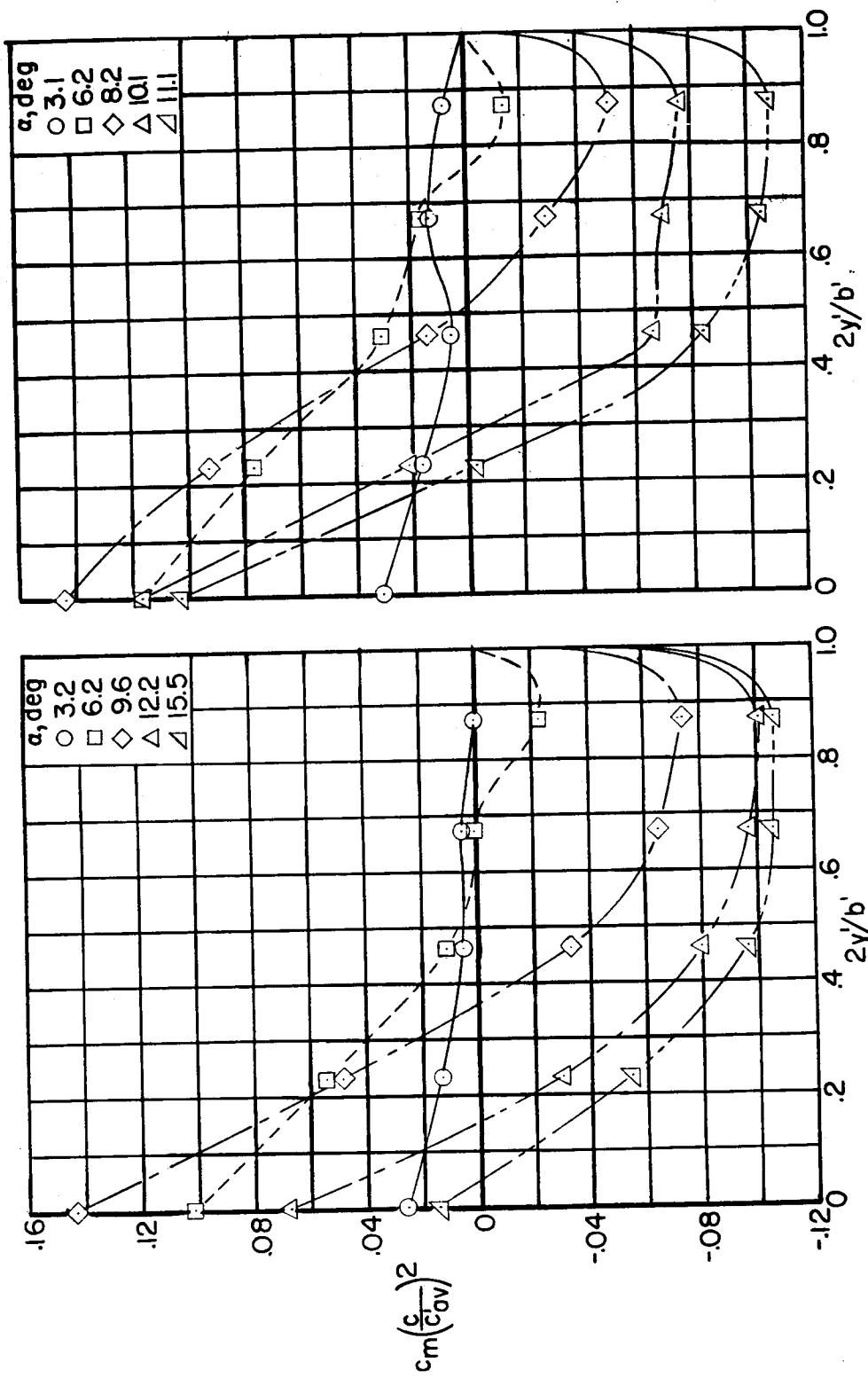


Figure 18.- Spanwise pitching-moment distributions over the wing of the X-3 airplane at representative Mach numbers and angles of attack.

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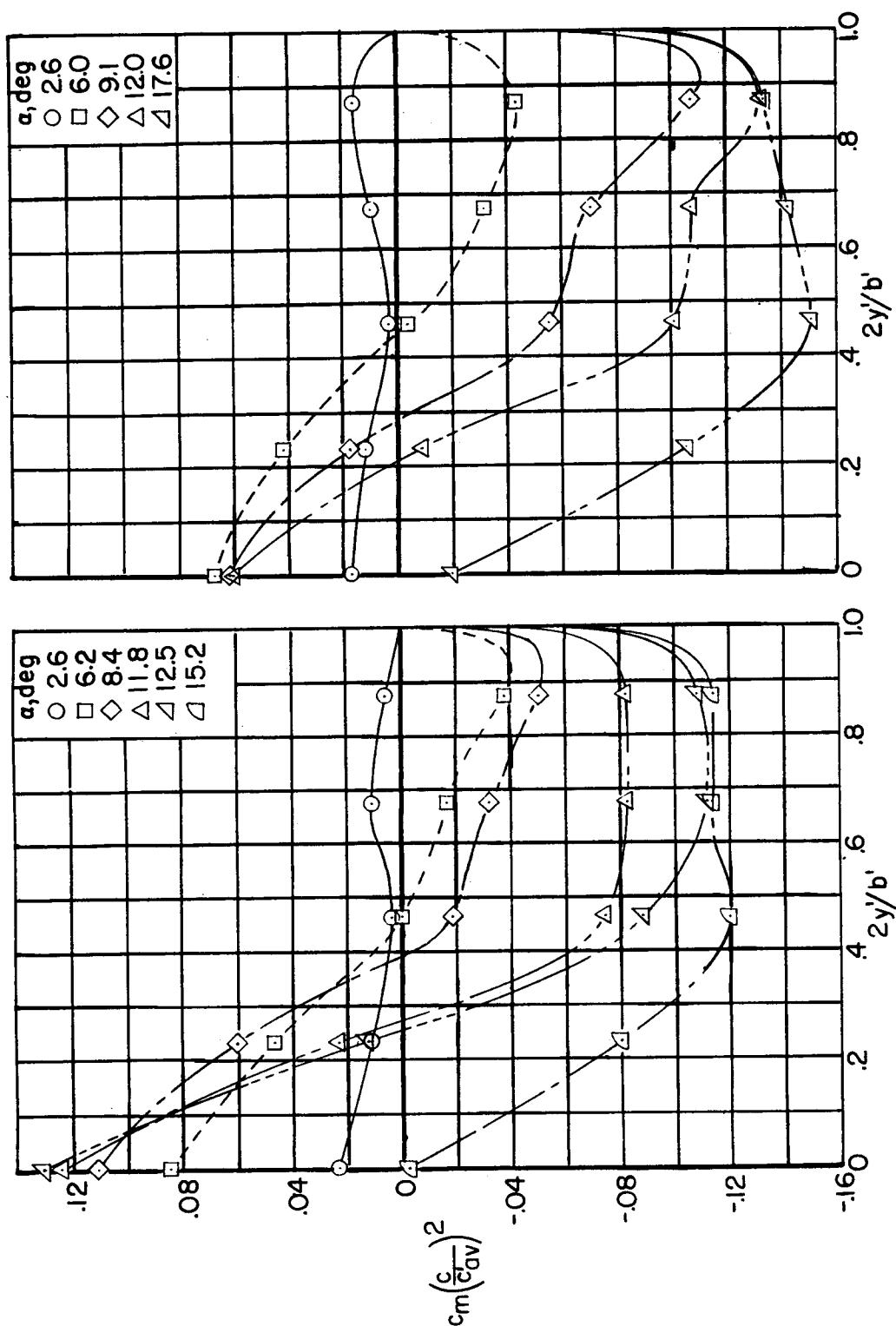


Figure 18.- Continued.

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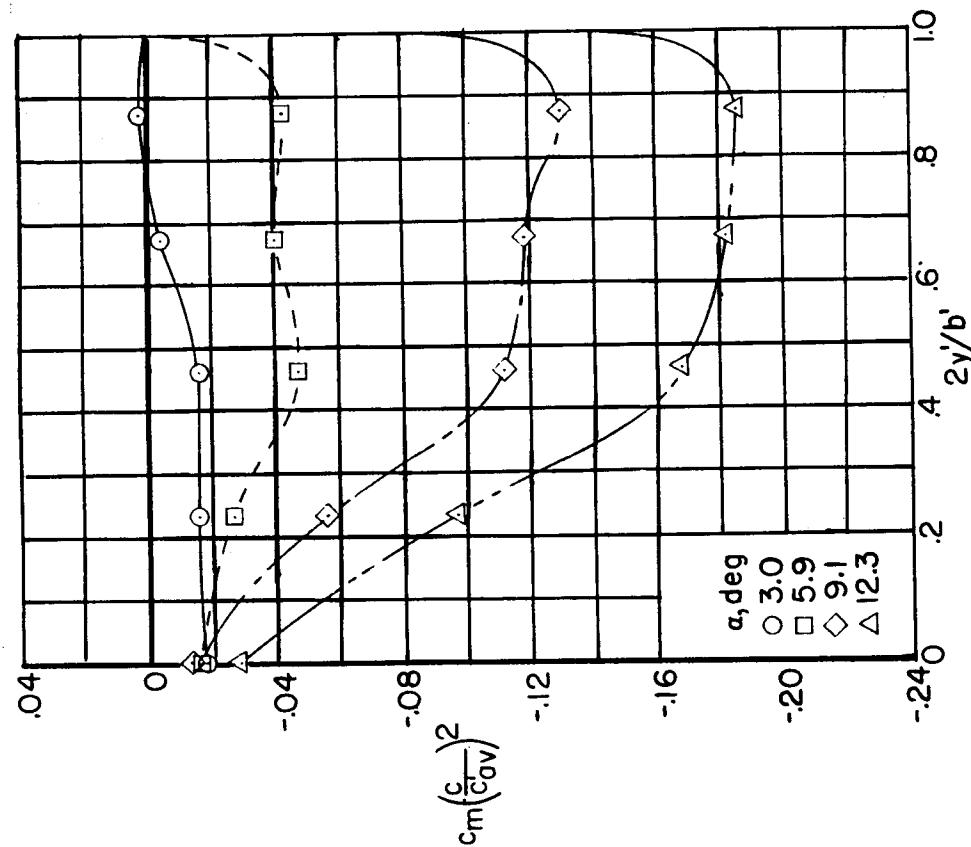
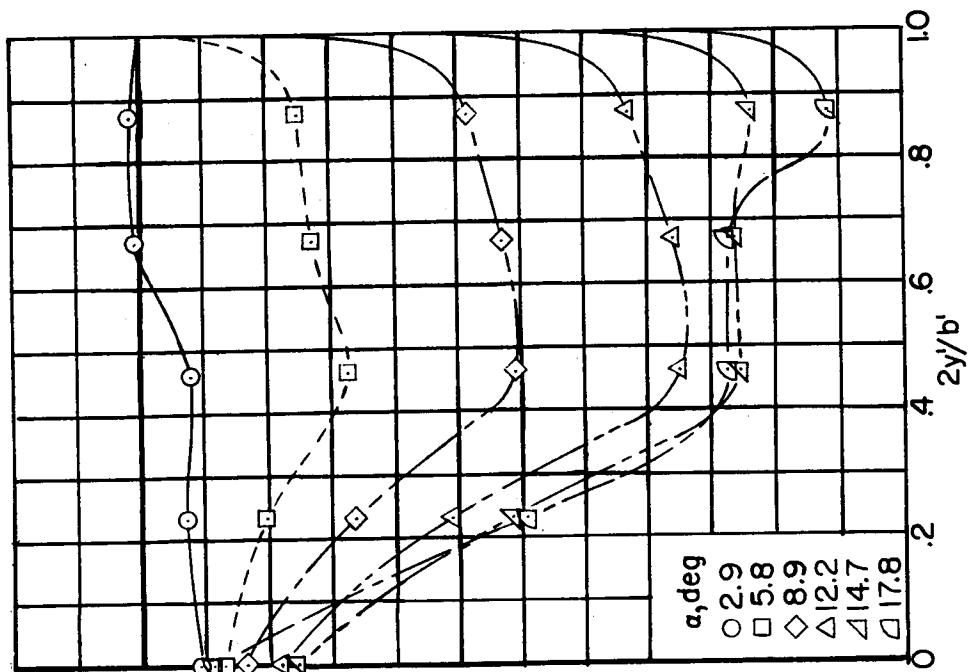
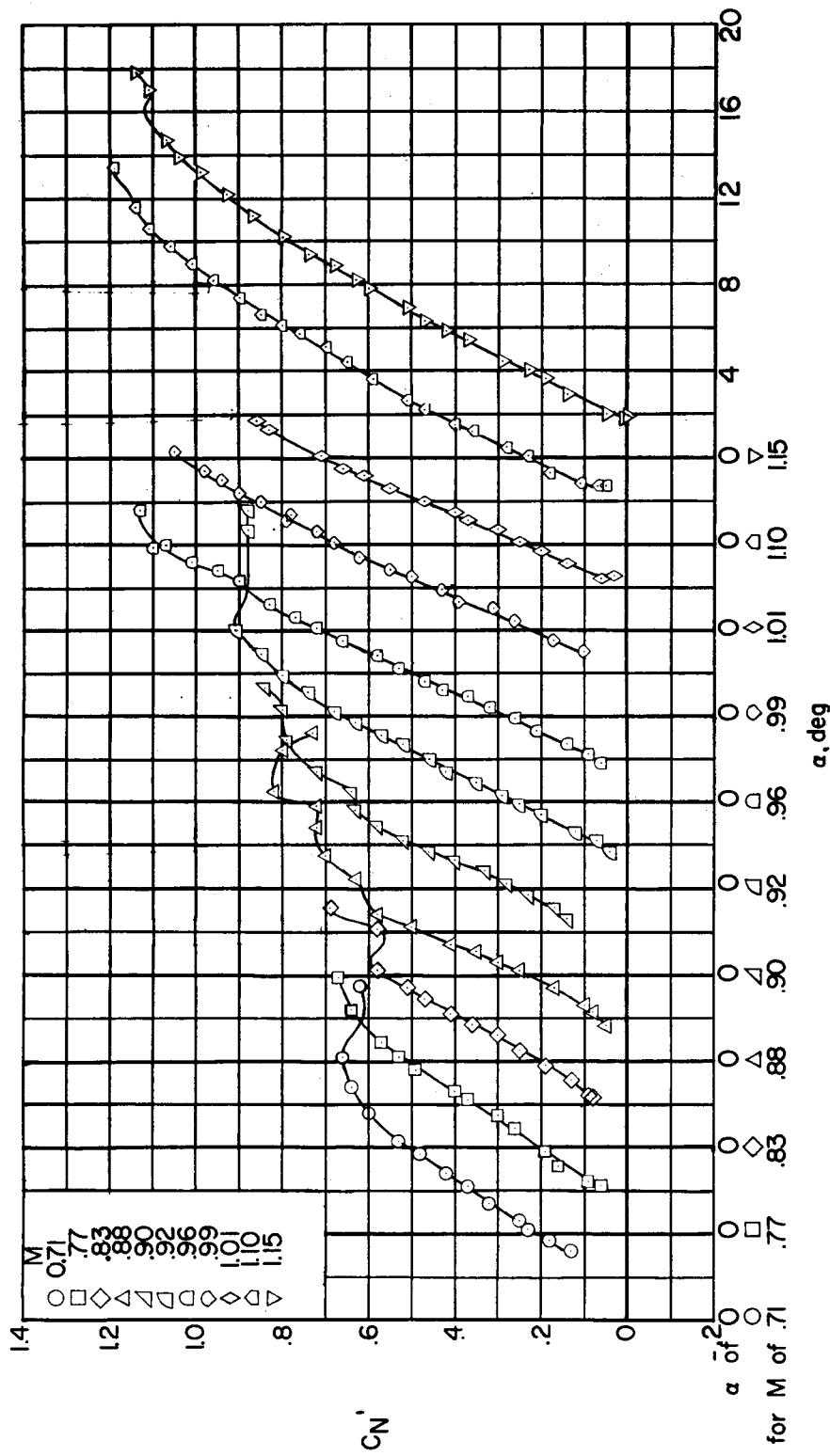
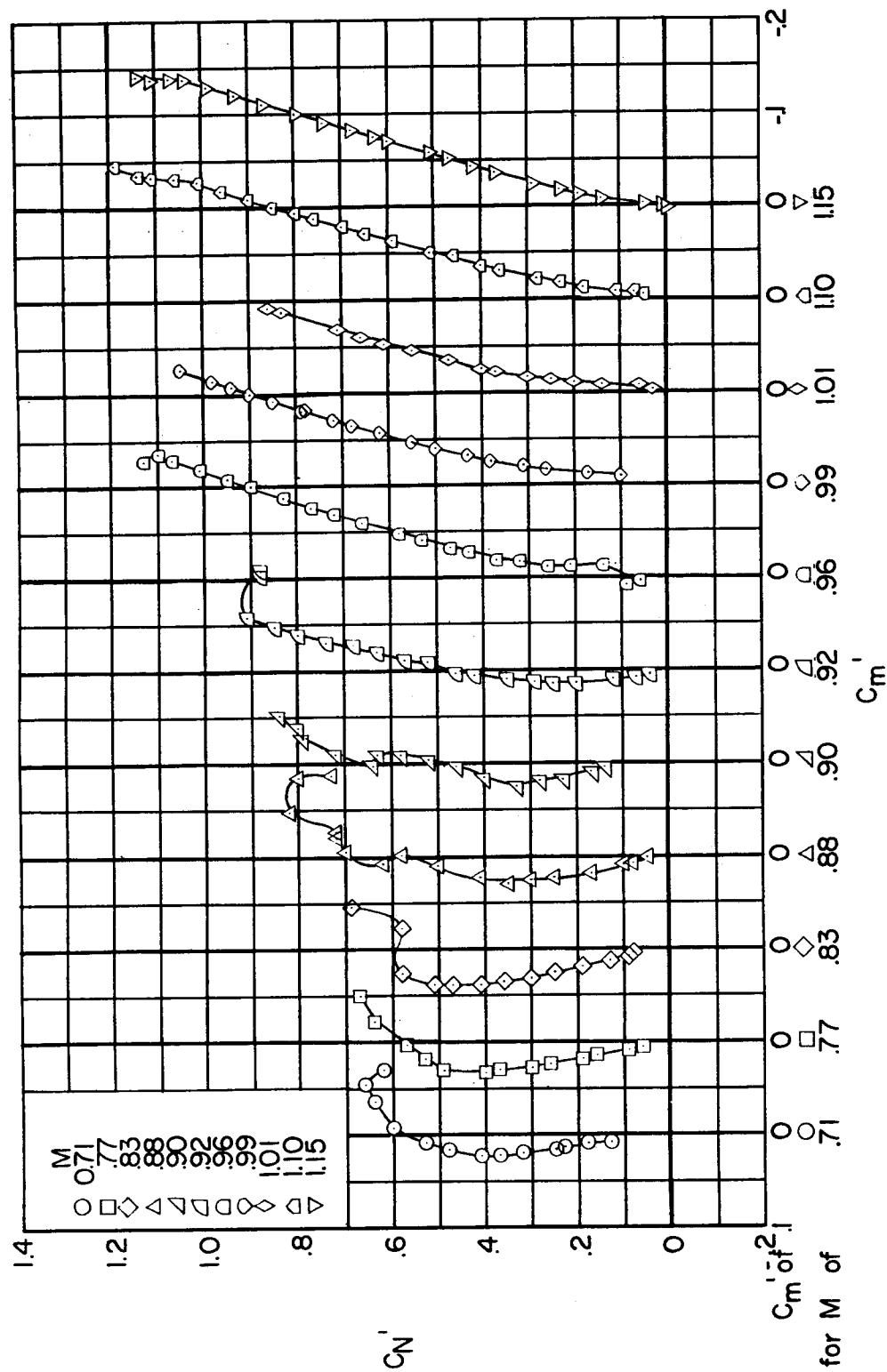


Figure 18.- Concluded.



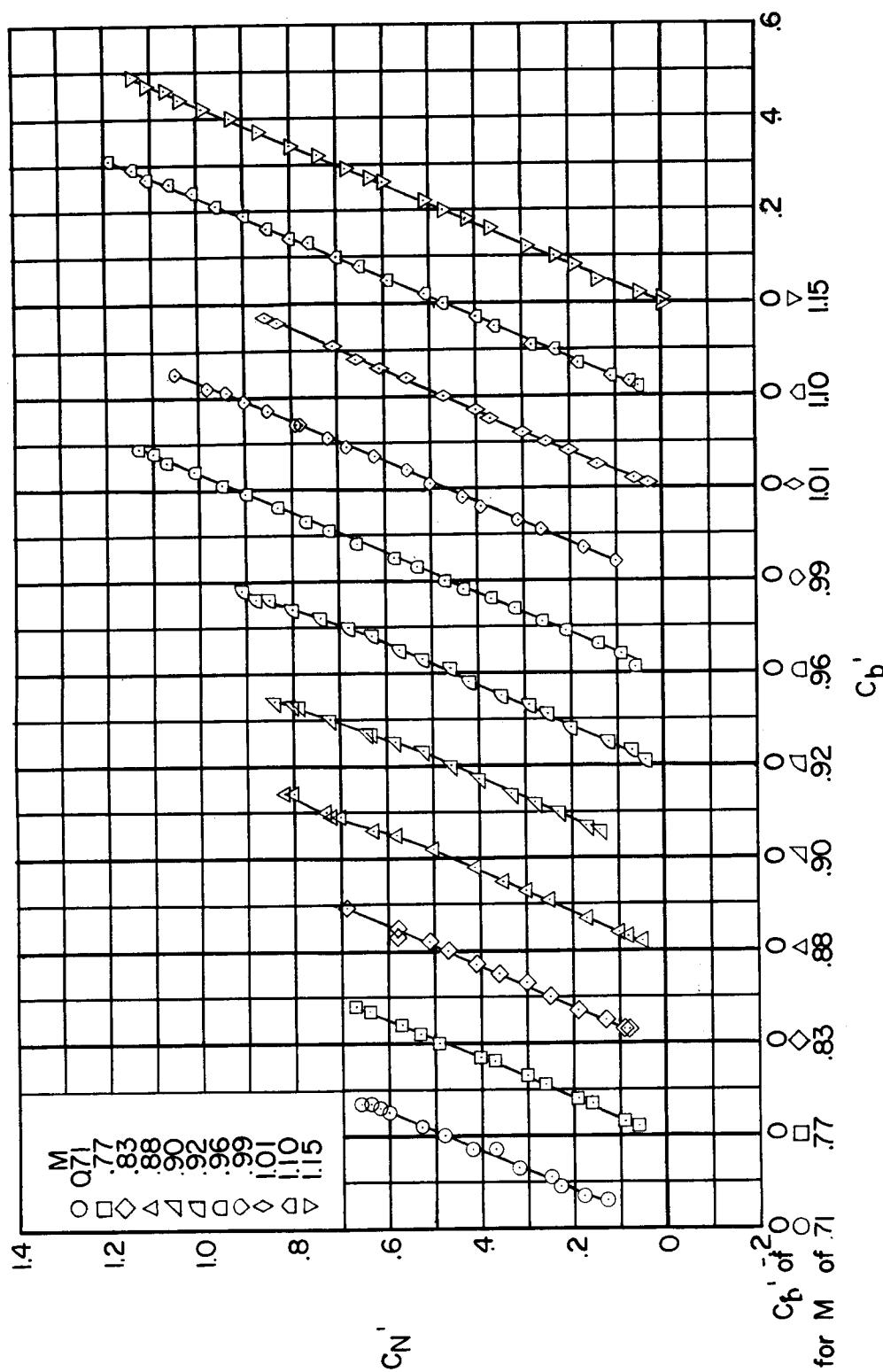
(a) Normal-force coefficient.

Figure 19.- Wing-panel aerodynamic characteristics for the X-3 airplane.



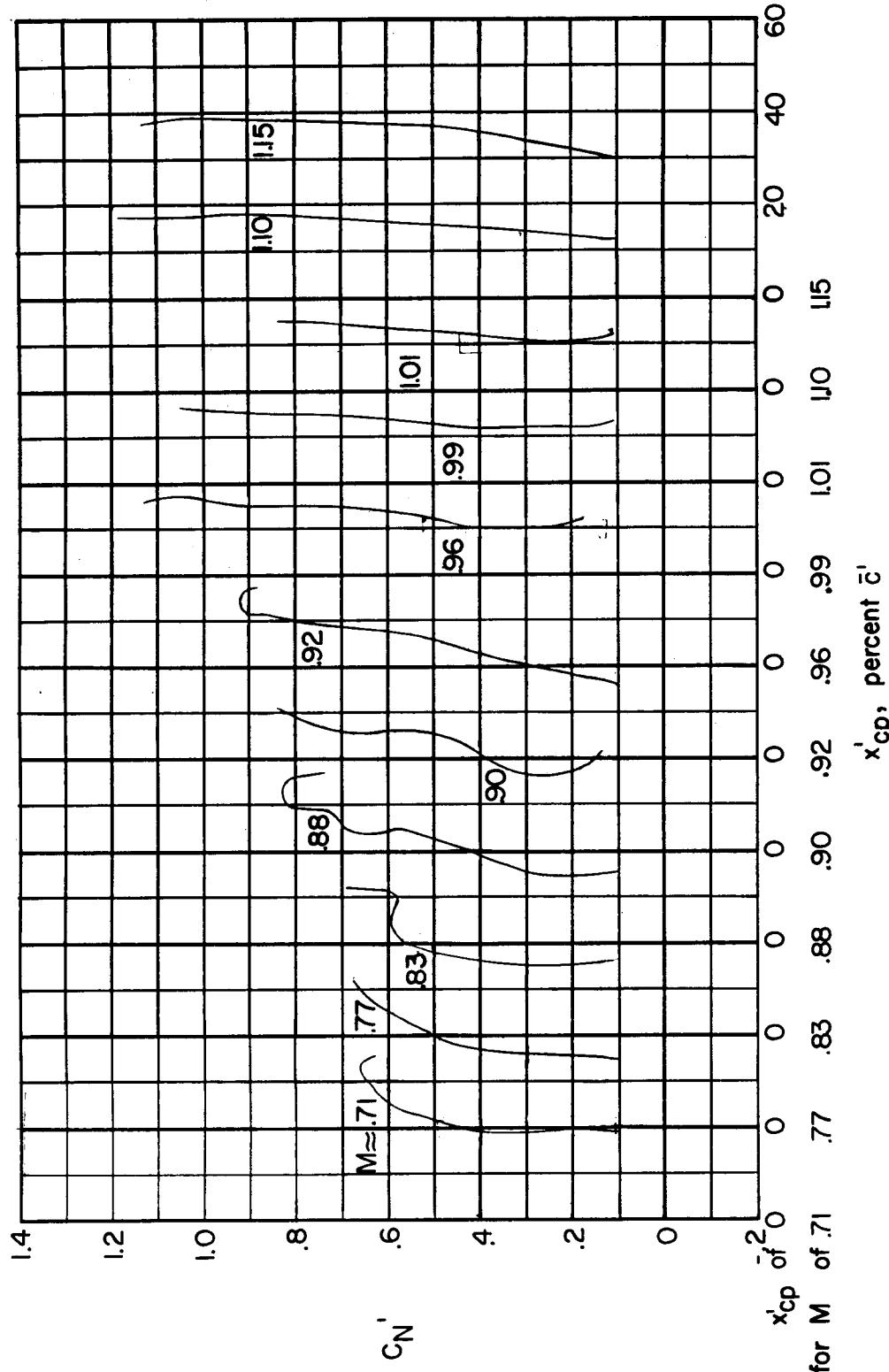
(b) Pitching-moment coefficient.

Figure 19.- Continued.



(c) Bending-moment coefficient.

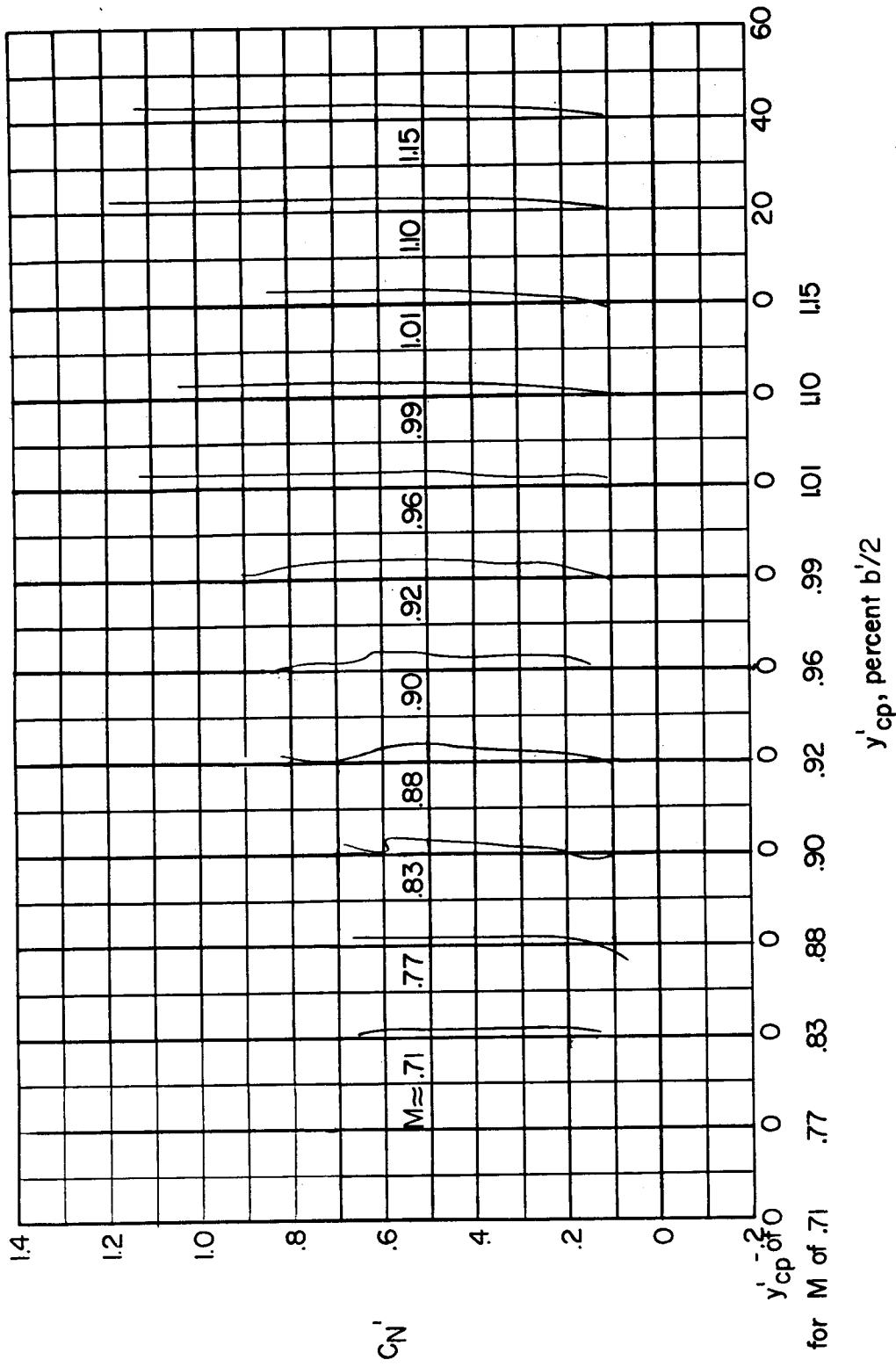
Figure 19.- Continued.



(d) Chordwise location of center of pressure.

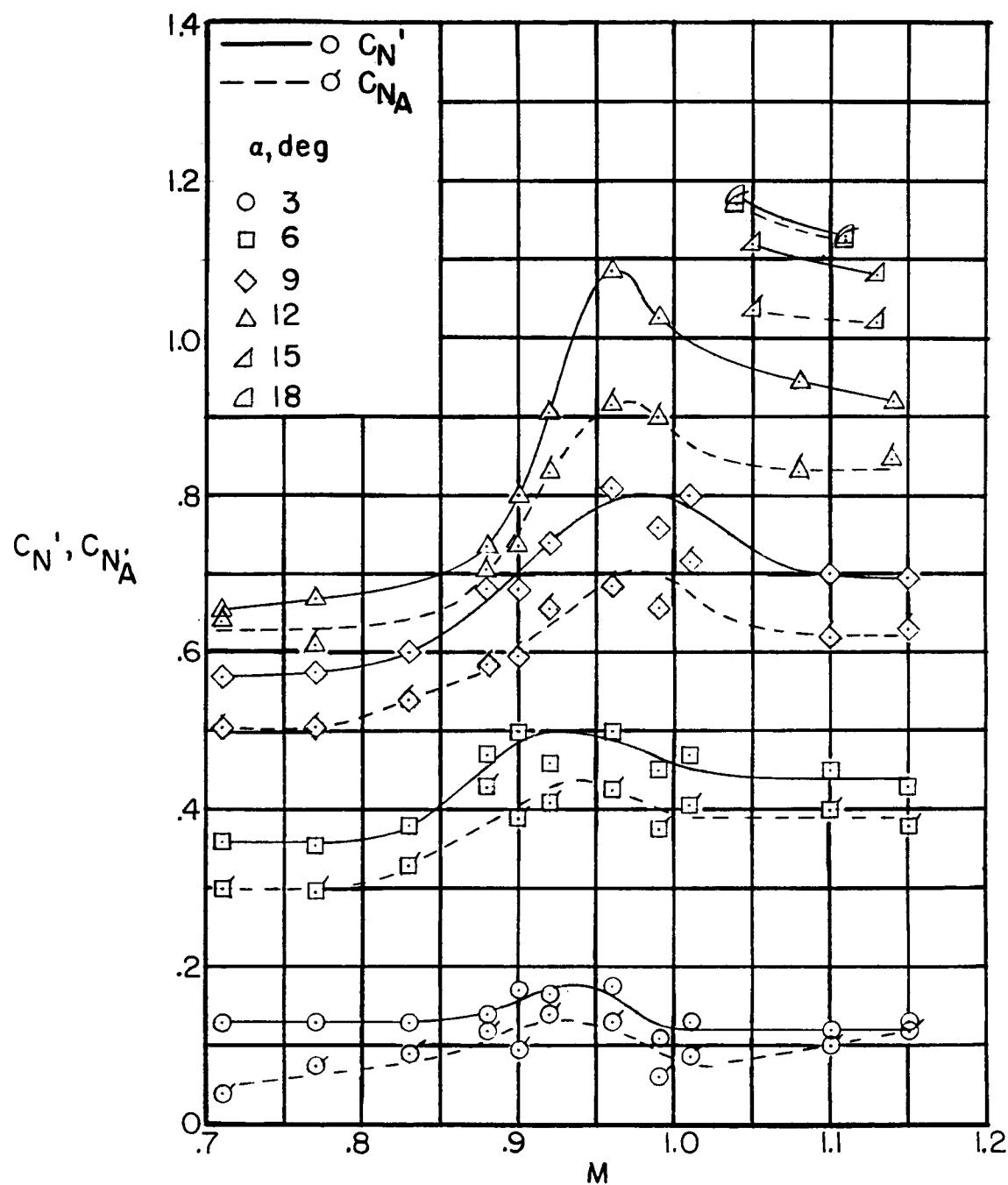
Figure 19.- Continued.

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(e) Spanwise location of center of pressure.

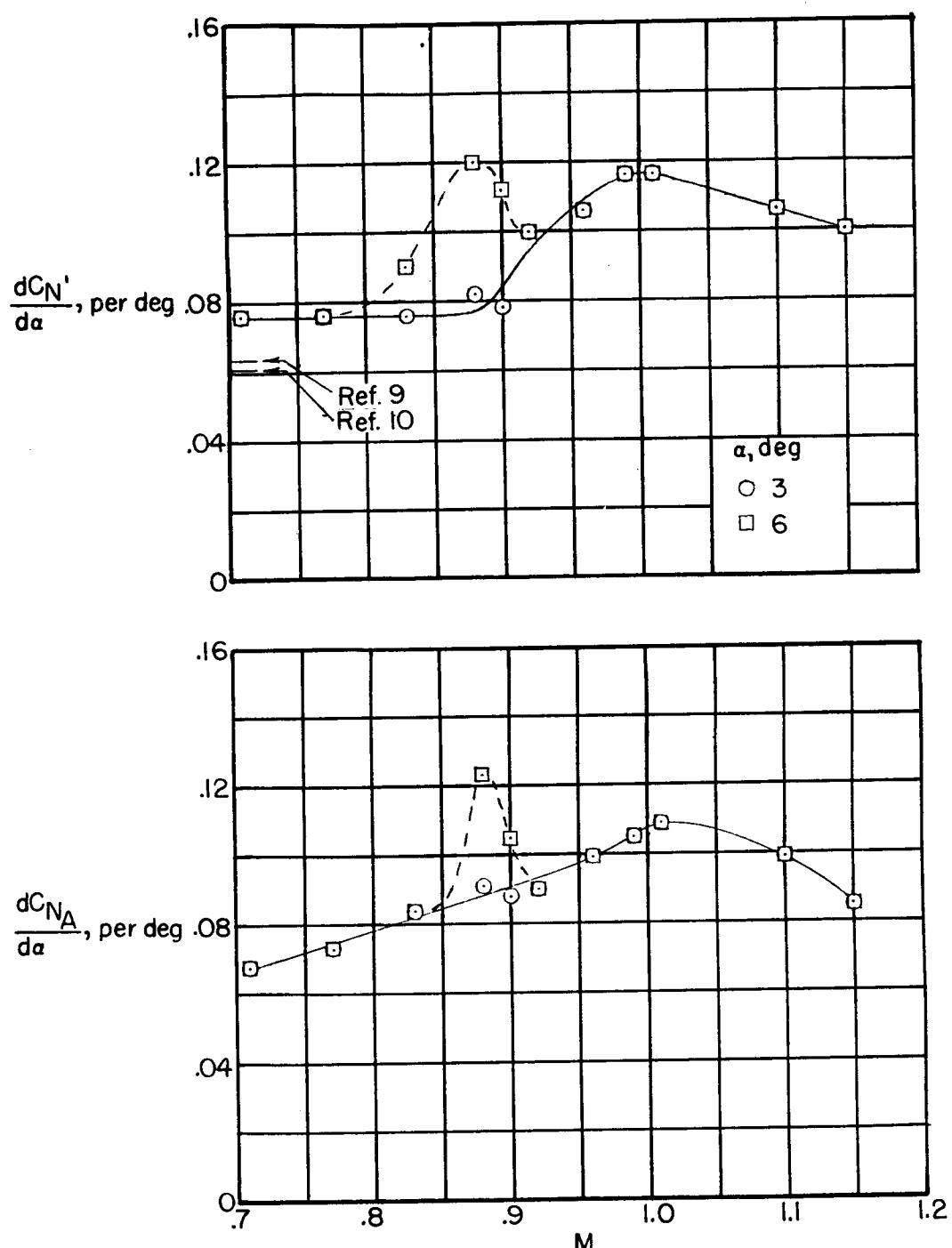
Figure 19.- Concluded.



(a) Normal-force coefficient.

Figure 20.- Variation with Mach number of the aerodynamic characteristics of the wing of the X-3 airplane at several angles of attack including a comparison with the airplane characteristics.

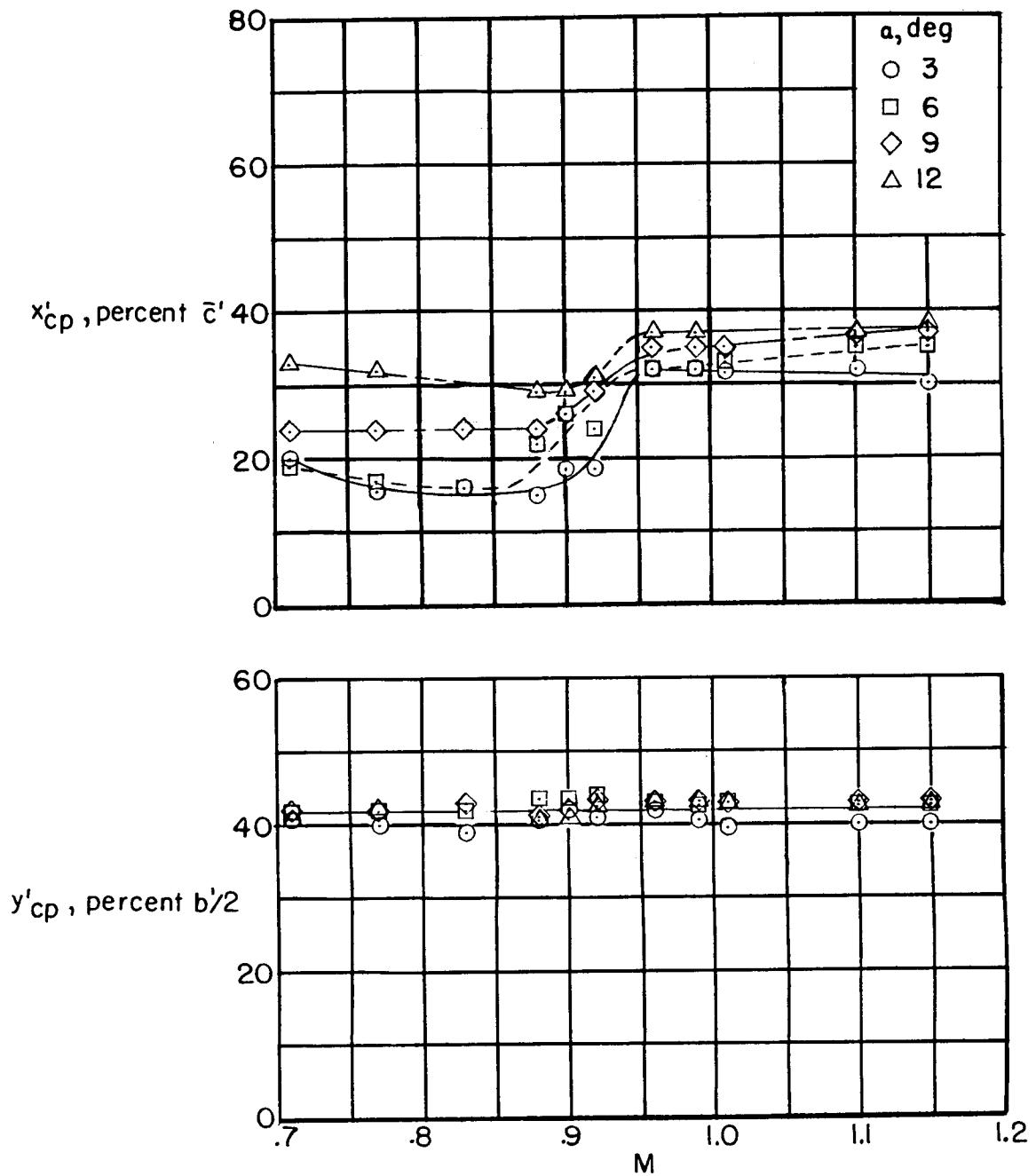
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(b) Normal-force-curve slope.

Figure 20.-- Continued.

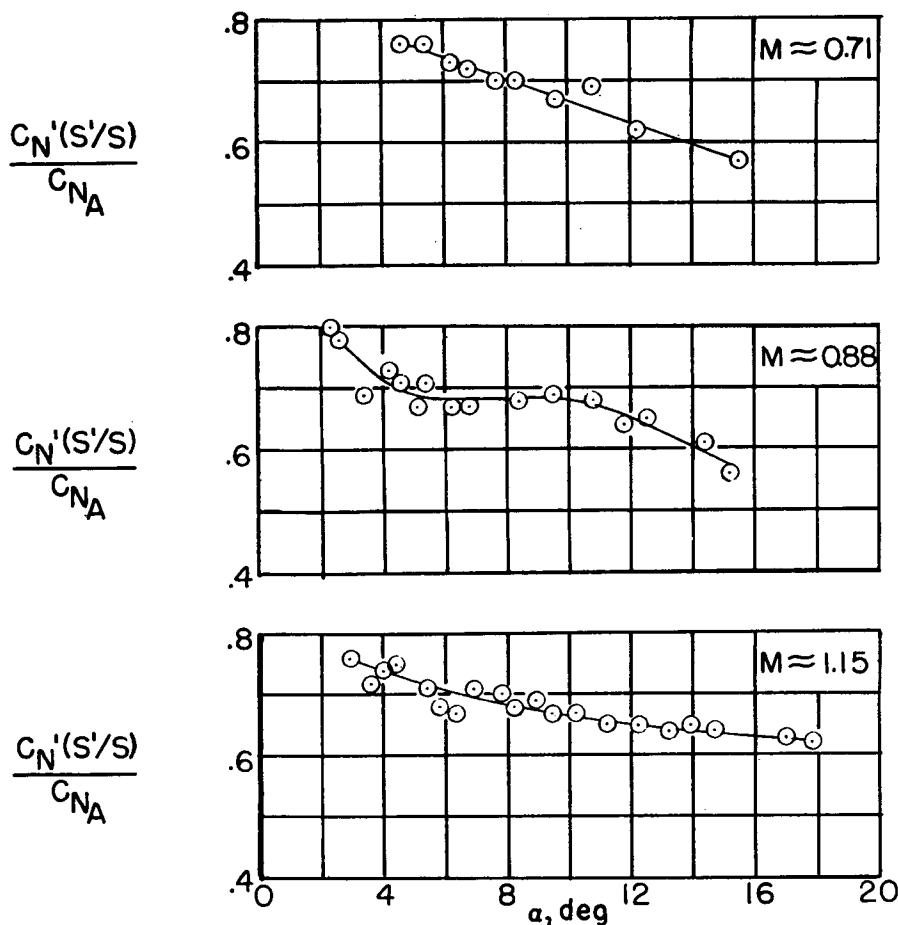
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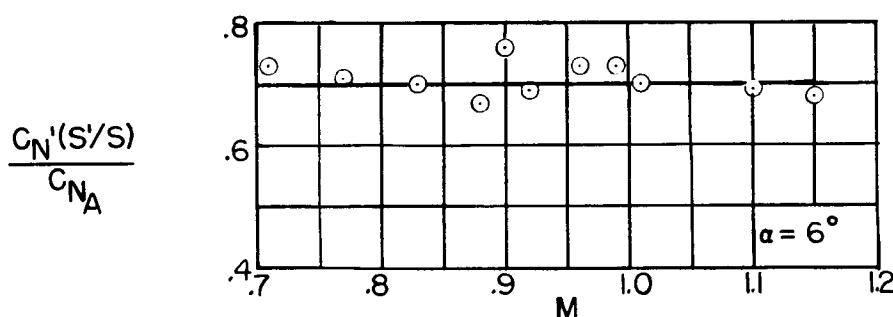
(c) Center of pressure.

Figure 20.- Concluded.

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(a) Variation with angle of attack.



(b) Variation with Mach number.

Figure 21.- Variation with angle of attack and Mach number of the contribution of the wing of the X-3 airplane to the total normal force.

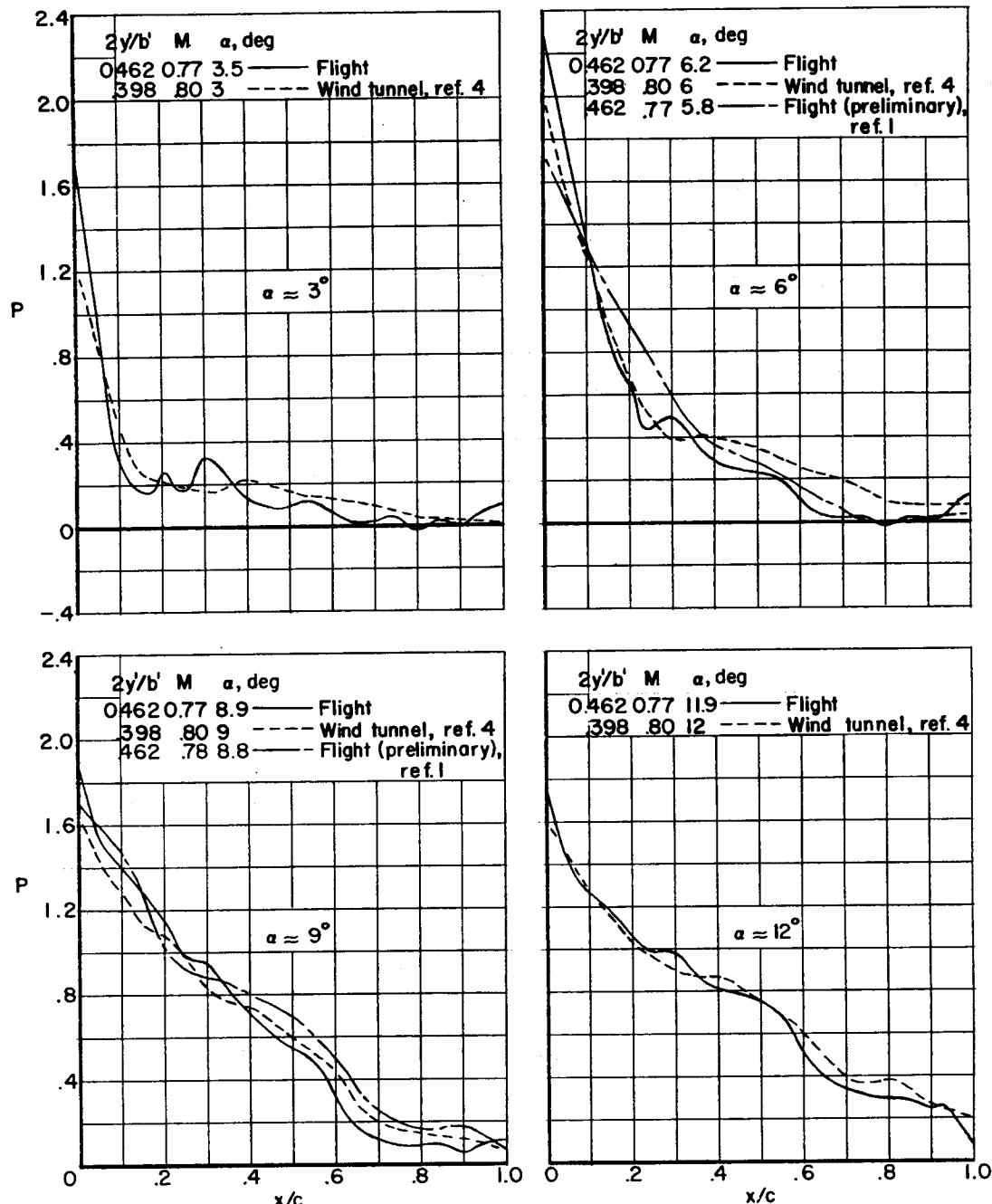
(a) $M \approx 0.77$.

Figure 22.- Comparison of flight data to wind-tunnel results of reference 4 for the X-3 airplane. Chordwise load distributions for station near the midsemispan.

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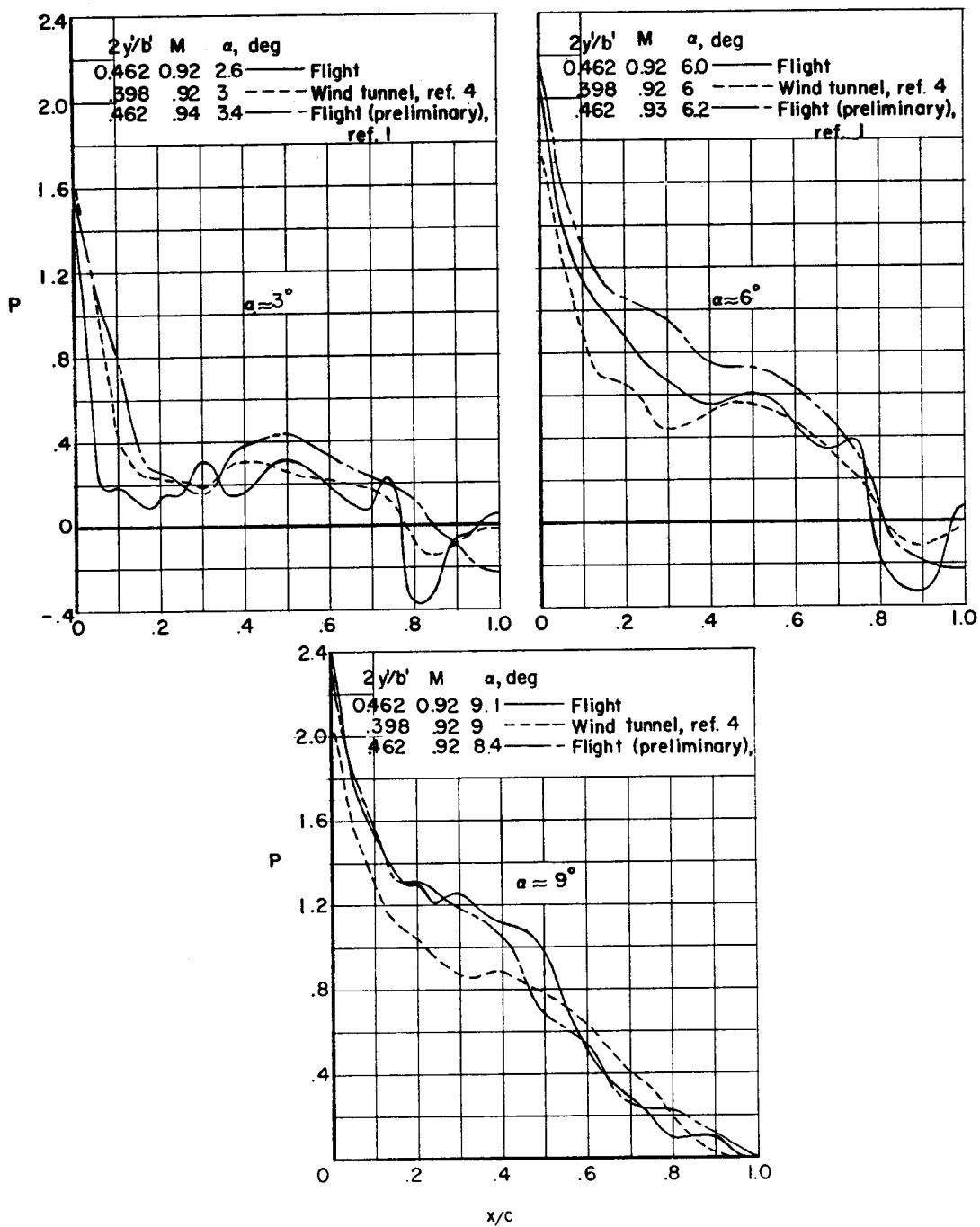
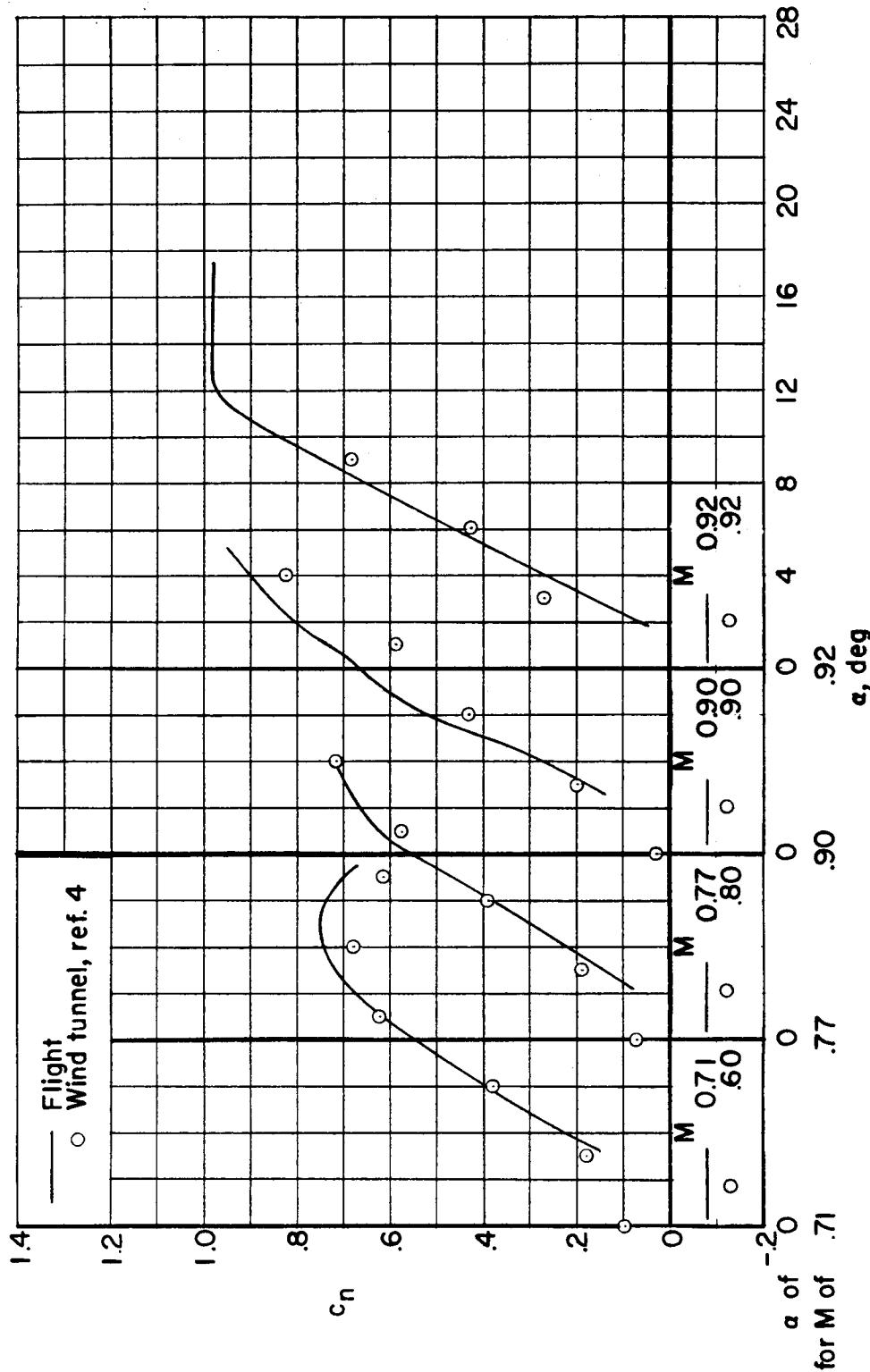
(b) $M \approx 0.92$.

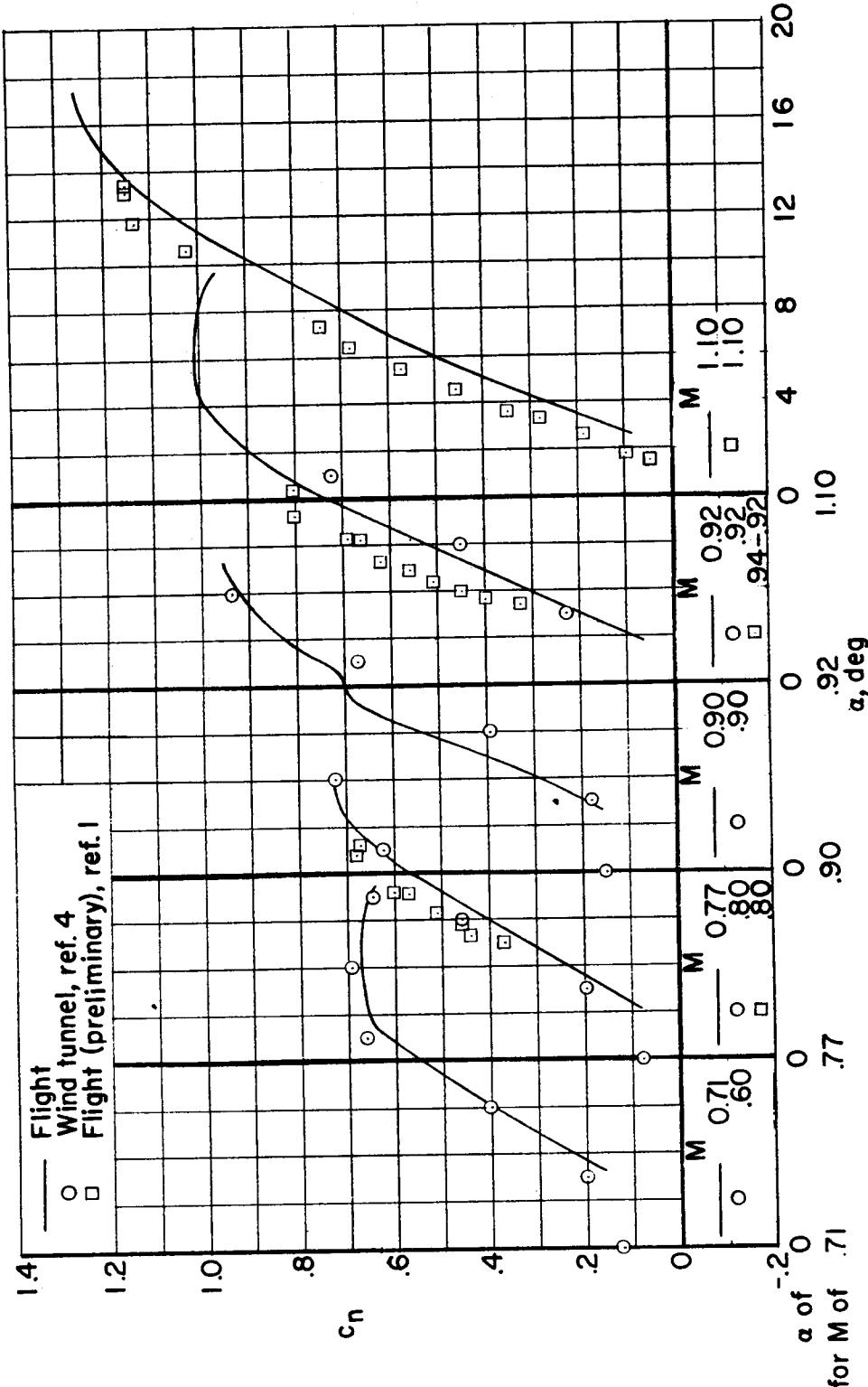
Figure 22.- Concluded.

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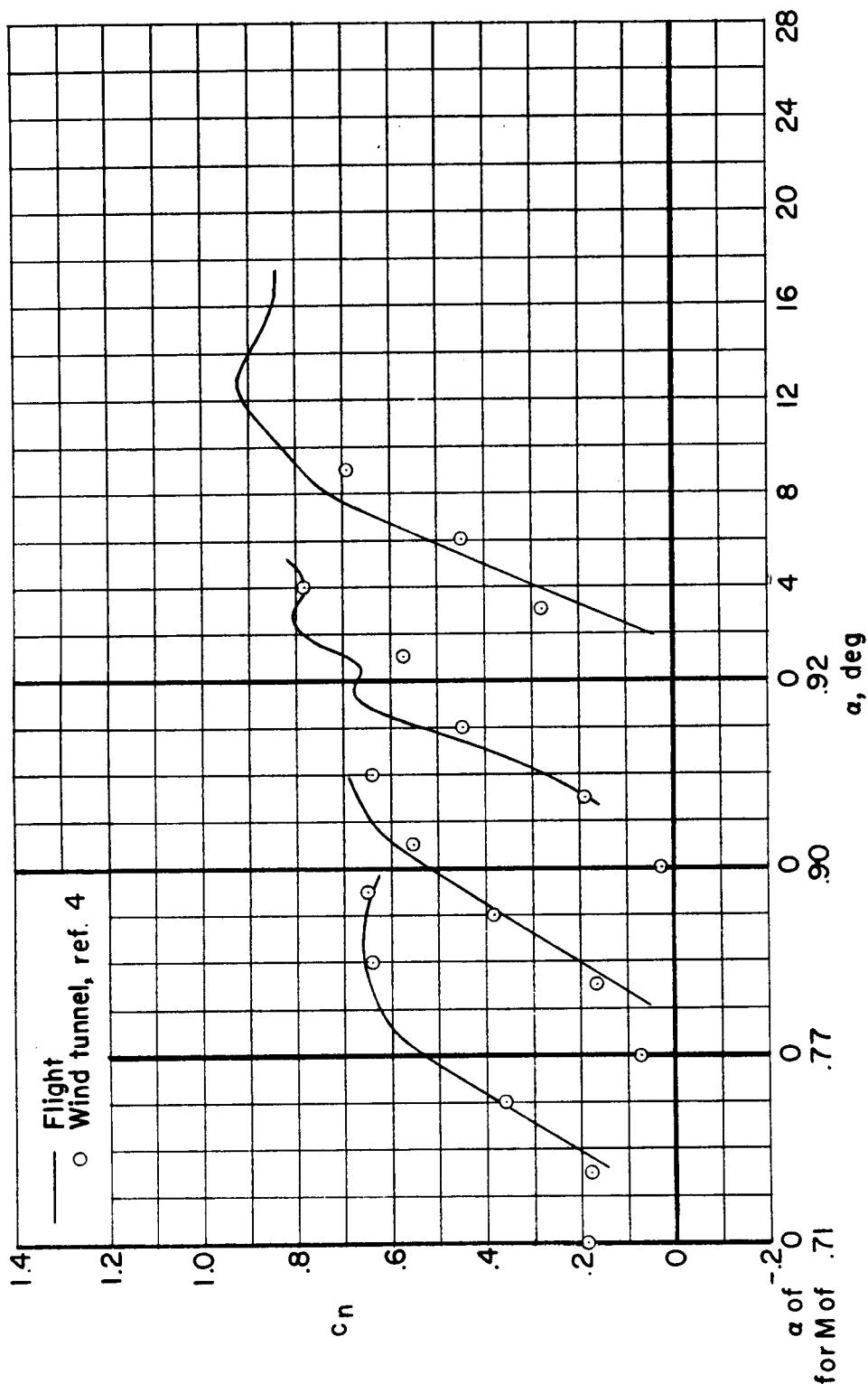
(a) Station 0.231b'/2 (flight); station 0.184b'/2 (wind tunnel, ref. 4).

Figure 23.- Comparison of flight data with wind-tunnel results of reference 4 for the X-3 airplane. Section normal-force coefficient.



(b) Station 0.462b'/2 (flight); station 0.398b'/2 (wind tunnel, ref. 4).

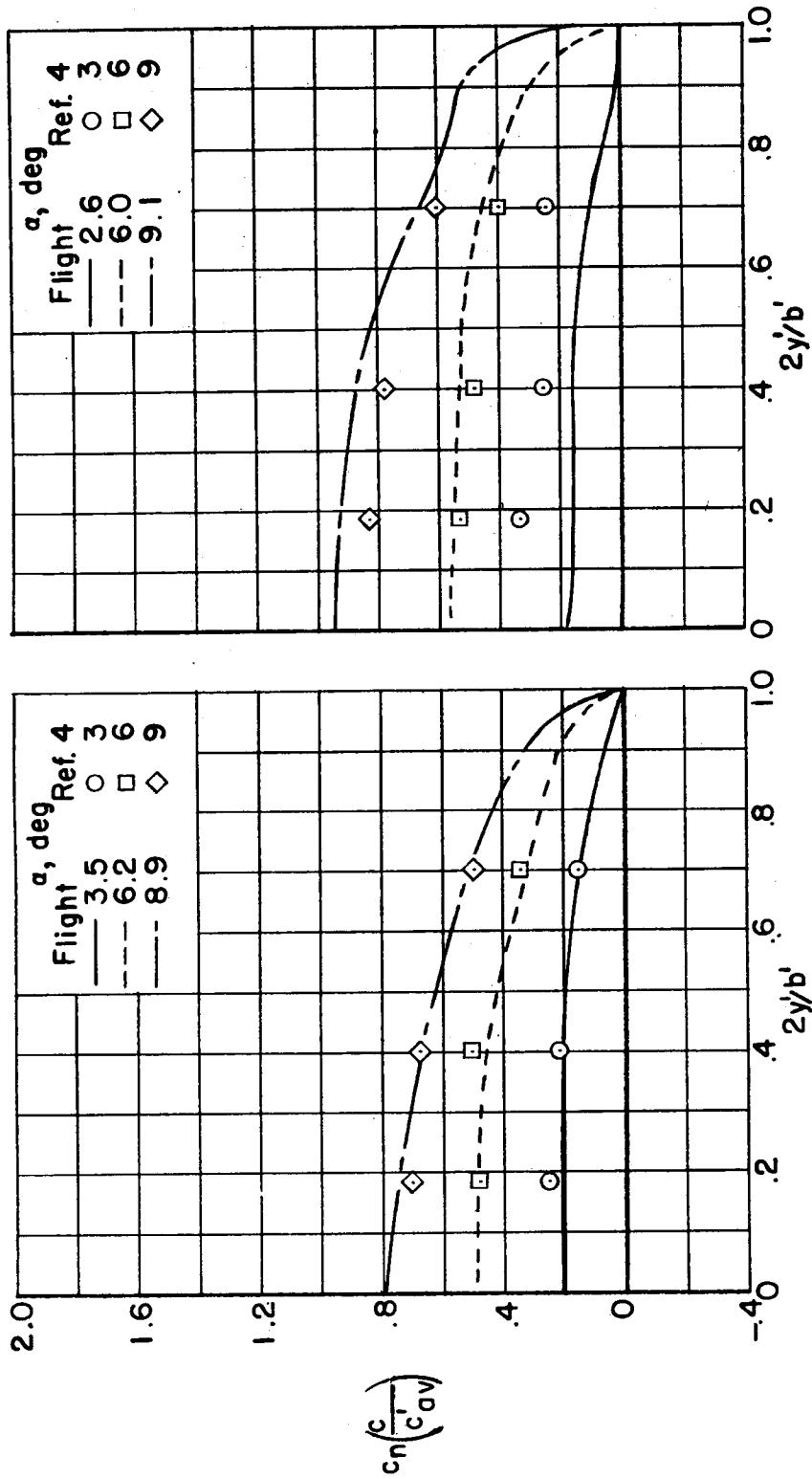
Figure 23.- Continued.



(c) Station $0.673b'/2$ (flight); station $0.699b'/2$ (wind tunnel, ref. 4).

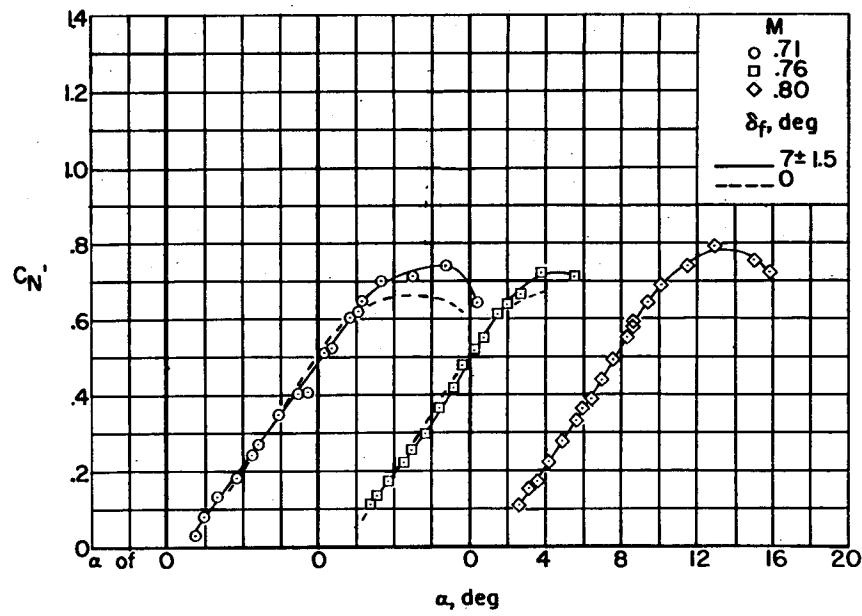
Figure 23.- Concluded.

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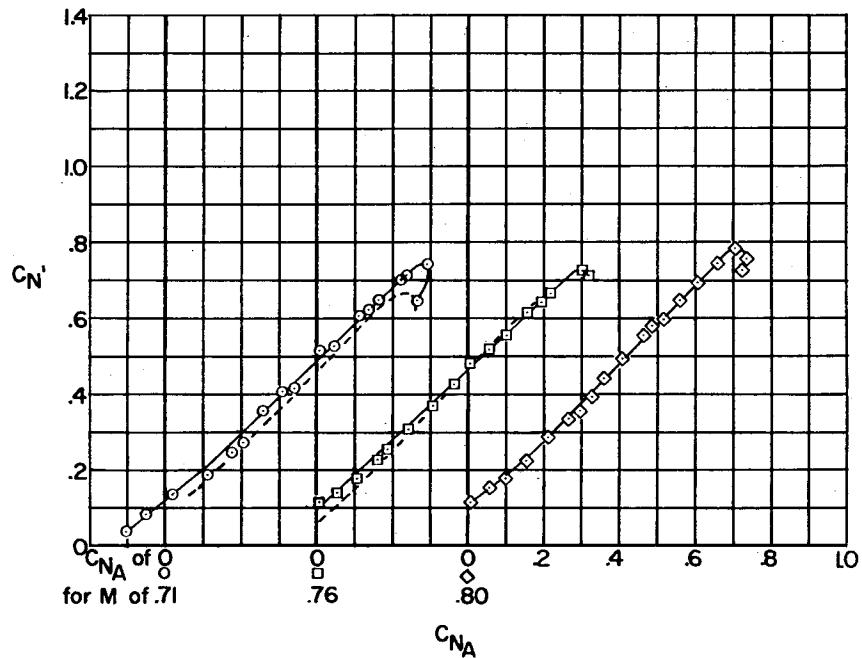


(a) $M \approx 0.77$ (flight); $M = 0.80$ (wind tunnel, (b) $M \approx 0.92$ (flight); $M = 0.92$ (wind tunnel, ref. 4).

Figure 24.- Comparison of flight data with wind-tunnel results of reference 4 for the X-3 airplane. Spanwise load distribution.



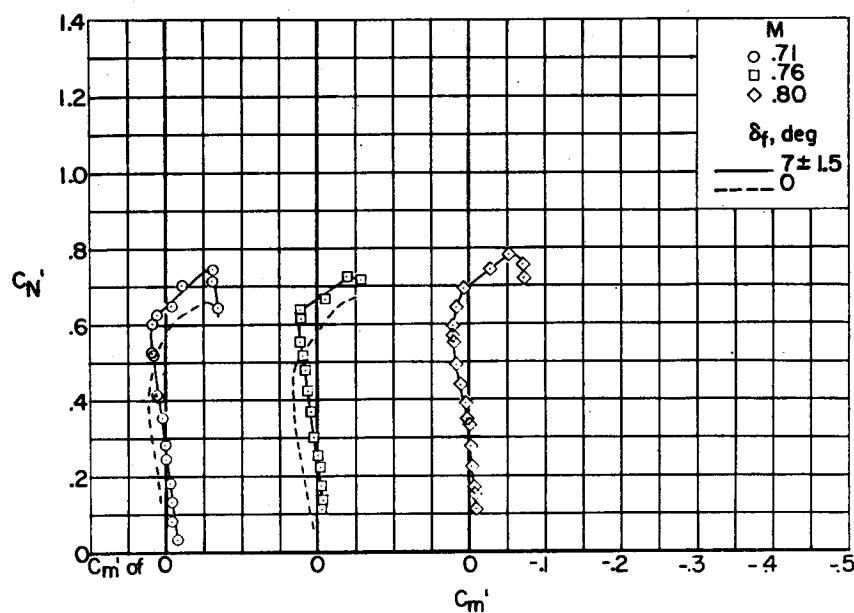
(a) Wing-panel normal-force coefficient.



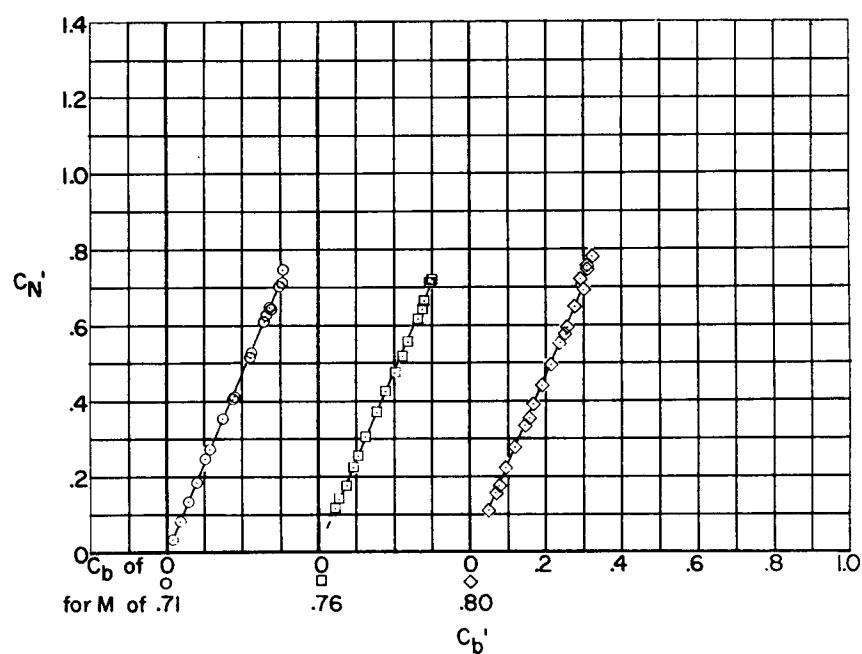
(b) Airplane normal-force coefficient.

Figure 25.- Wing-panel aerodynamic characteristics for the wing of the X-3 airplane. $\delta_f = 7^\circ \pm 1.5^\circ$.

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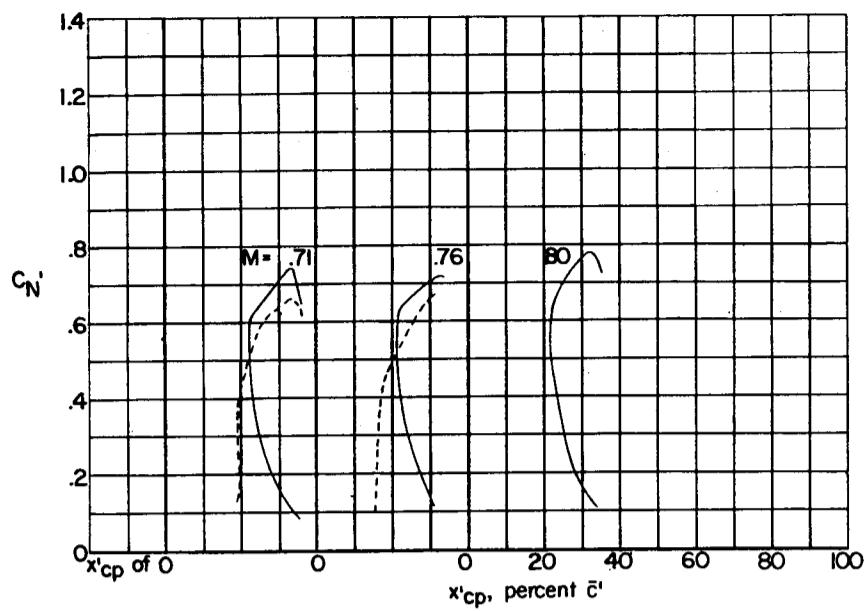


(c) Pitching-moment coefficient.

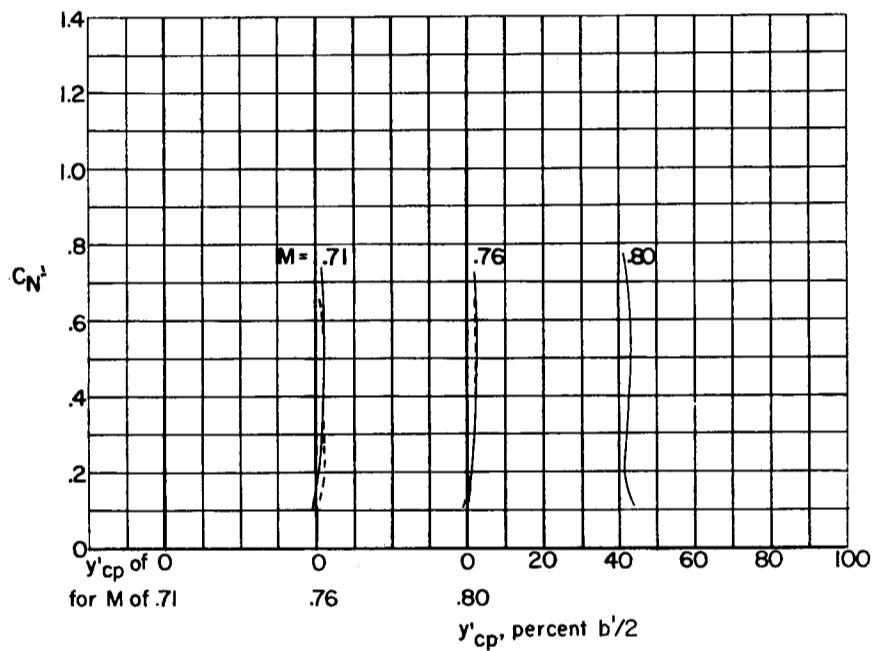


(d) Bending-moment coefficient.

Figure 25.- Continued.



(e) Chordwise location of center of pressure.



(f) Spanwise location of center of pressure.

Figure 25.- Concluded.